

FCC RF Test Report

APPLICANT : Quanta Computer Inc.
EQUIPMENT : Laptop Computer
BRAND NAME : OLPC
MODEL NAME : XO-4 Touch, XO-4 HS Touch, XO-4, XO-4 HS
FCC ID : HFS-CL4
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Dec. 17, 2012 and completely tested on Feb. 25, 2013. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR2D1707B	Rev. 01	Initial issue of report	Feb. 25, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	-
			Radiated Spurious Emission		Pass	Under limit 3.19 dB at 4926.000 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 7.98 dB at 7.210 MHz
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Quanta Computer Inc

No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, TaiWan

1.2 Manufacturer

Quanta Computer Inc

No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, TaiWan

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Laptop Computer
Brand Name	OLPC
Model Name	XO-4 Touch, XO-4 HS Touch, XO-4, XO-4 HS
WLAN Module	Trade Name: Liteon Model Name: WCBN603MH
FCC ID	HFS-CL4
EUT supports Radios application	WLAN 11abgn/Bluetooth
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz 802.11a/n: 5745~5825MHz.
Maximum Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 18.62 dBm (0.0728 W) 802.11g : 20.12 dBm (0.1028 W) 802.11n HT20 : 20.33 dBm (0.1079 W) 802.11n HT40 : 20.29 dBm (0.1069 W) <5745 MHz ~ 5825 MHz> 802.11a : 21.53 dBm (0.1422 W) 802.11n HT20 : 21.66 dBm (0.1466 W) 802.11n HT40 : 21.39 dBm (0.1377 W)
Antenna Type	802.11b/g/n : Monopole Antenna type with gain 0.12 dBi 802.11a/n : Monopole Antenna type with gain 0.05 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH01-KS	CO01-KS	03CH01-KS	149928/4086E-1

1.6 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
- ♦ ANSI C63.4-2003 and ANSI C63.10-2009
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3
- ♦ NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radio communication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	159	5795
	151	5755	161	5805
	157	5785	165	5825

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

Channel	Frequency	802.11b RF Power (dBm)			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	17.96	17.82	17.38	17.16
CH 06	2437 MHz	18.62	18.26	18.16	18.08
CH 11	2462 MHz	18.23	18.15	18.06	18.18

Channel	Frequency	802.11g RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	19.23	18.42	18.32	18.26	19.18	18.24	18.54	19.01
CH 06	2437 MHz	20.05	20.01	19.95	19.45	19.62	20.03	19.92	19.86
CH 11	2462 MHz	20.12	19.76	19.85	19.81	19.78	19.76	19.68	19.52

Channel	Frequency	2.4GHz 802.11n HT20 RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	19.03	19.11	19.06	19.02	19.03	19.15	19.08	19.17
CH 06	2437 MHz	20.18	20.28	20.22	20.19	20.16	20.28	20.26	20.27
CH 11	2462 MHz	20.26	20.21	20.19	20.13	20.11	20.24	20.28	20.33

Channel	Frequency	2.4GHz 802.11n HT40 RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 03	2422 MHz	18.32	18.17	18.21	19.06	19.17	19.25	18.29	18.02
CH 06	2437 MHz	19.12	19.07	19.28	20.02	19.69	19.73	19.62	19.21
CH 09	2452 MHz	20.23	20.15	20.28	20.01	20.18	20.13	20.01	20.29

Channel	Frequency	802.11a RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 149	5745 MHz	21.53	21.06	21.08	21.14	21.21	21.12	21.21	21.25
CH 157	5785MHz	21.46	21.13	21.34	21.42	21.26	21.43	21.37	21.43
CH 165	5825 MHz	21.40	21.15	21.36	21.21	21.34	21.32	21.22	21.28

Channel	Frequency	5GHz 802.11n HT-20 RF Power (dBm)							
		OFDM Data Rate							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 149	5745 MHz	20.86	20.78	20.81	20.70	20.76	20.66	20.71	20.76
CH 157	5785MHz	21.36	21.30	21.26	21.25	21.20	21.08	21.12	21.28
CH 165	5825 MHz	21.66	21.59	21.53	21.41	21.38	21.20	21.29	21.43

Channel	Frequency	5GHz 802.11n HT-40 RF Power (dBm)							
		OFDM Data Rate							
		13.5 Mbps	27 Mbps	40.5 Mbps	54 Mbps	81 Mbps	108 Mbps	121.5 Mbps	135 Mbps
CH 151	5755MHz	21.36	21.16	21.20	21.29	21.22	21.11	21.08	21.10
CH 159	5795MHz	21.39	21.21	21.18	21.36	21.29	21.08	21.02	21.25

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

<2.4GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB BW Power Spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	65 Mbps	1/6/11
		802.11n HT40	135 Mbps	3/6/9
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	65 Mbps	1/6/11
		802.11n HT40	135 Mbps	3/6/9
	Conducted Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	65 Mbps	1/11
		802.11n HT40	135 Mbps	3/9
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	65 Mbps	1/6/11
		802.11n HT40	135 Mbps	3/6/9
Radiated TCs	Radiated Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	65 Mbps	1/11
		802.11n HT40	135 Mbps	3/9
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	65 Mbps	1/6/11
		802.11n HT40	135 Mbps	3/6/9

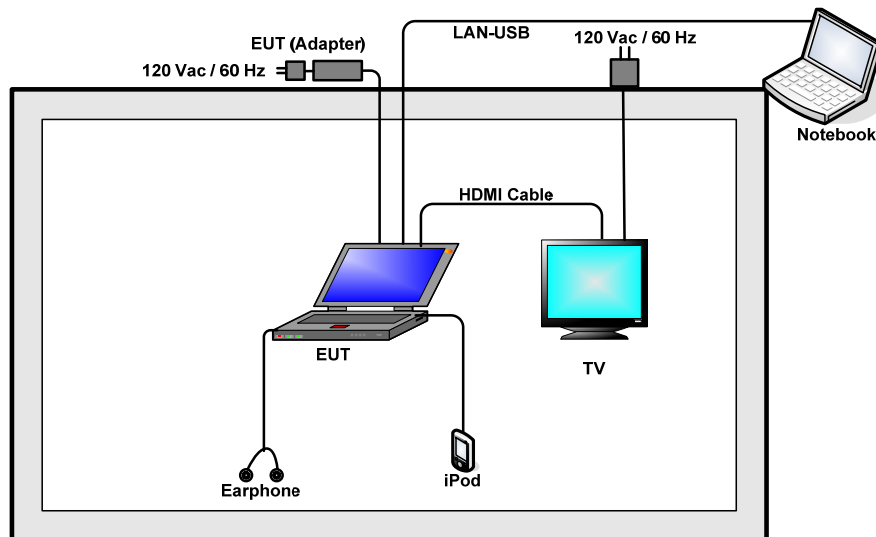
<5GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB BW Power Spectral Density	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159
	Output Power	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159
	Conducted Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	6.5 Mbps	149/165
		802.11n HT40	13.5 Mbps	151/159
	Conducted Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	6.5 Mbps	149/165
		802.11n HT40	13.5 Mbps	151/159
	Radiated Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159

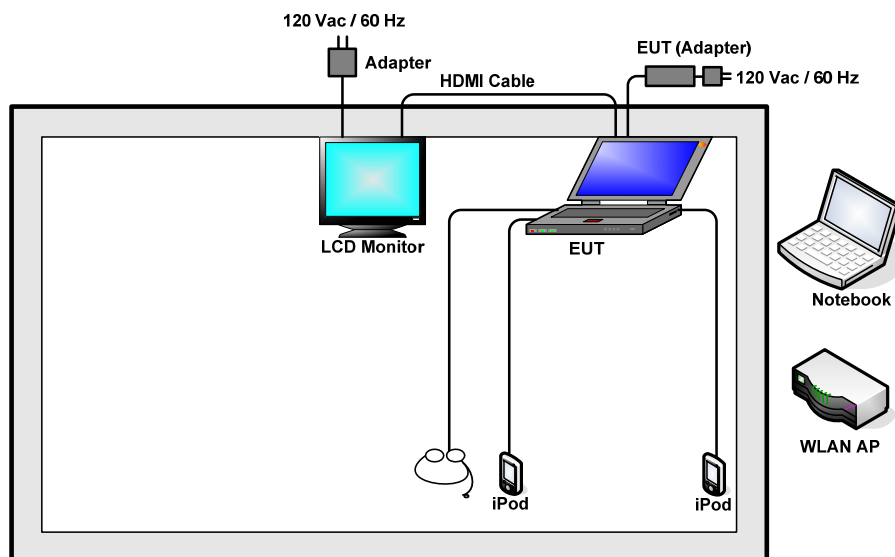
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4GHz) Link + Adapter 1 + TC for Sample 1
	Mode 2 : WLAN (2.4GHz) Link + Adapter 2 + TC for Sample 2
	Mode 3 : WLAN (2.4GHz) Link + Adapter 3 + TC for Sample 3
	Mode 4 : WLAN (2.4GHz) Link + Adapter 4 + TC for Sample 4
	Mode 5 : WLAN (5GHz) Link + Adapter 1 + TC for Sample 1
Remark: 1. The worst case of conducted emission is mode 1; only the test data of it was reported. 2. TC stands for Test Configuration, and consists of iPod, Earphone, HDMI Cable, SD Card.	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	PP42L	QDS-BRCM1030	N/A	AC I/P: Unshielded, 0.8 m DC O/P: Shielded, 1.8 m
3.	iPod	Apple	A1199	FCC DoC	Shielded, 1.2 m	N/A
4.	TV	Sony	KLV32V300A	FCC DoC	N/A	Unshielded, 1.8 m
5.	LCD Monitor	Medion	MD20147	N/A	N/A	Unshielded, 1.8 m
6.	SD Card	Scan Disk	16G Class 10	FCC DoC	N/A	N/A
7.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
8.	Notebook	DELL	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m
9.	Earphone	INTOPIC	Jazz-278	FCC DoC	Shielded, 2.2 m	N/A

2.6 Description of RF Function Operation Test Setup

For WLAN function, turn on "Terminal" program under Linux system, the EUT will get into the engineering modes; then, entry instruction under CMD program in the notebook, the EUT will contact with WLAN AP for continuous transmitting and receiving signals.

2.7 Measurement Results Explanation Example

For conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and 10dB attenuator between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and 10dB attenuator factor.

Offset = RF cable loss + attenuator factor.

Following table shows an offset computation example with cable loss 5.6 dB.

Example:

$$\begin{aligned}\text{Offset (dB)} &= \text{RF cable loss (dB)} + \text{attenuator factor (dB)} \\ &= 5.6 + 10 = 15.6 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 KHz.

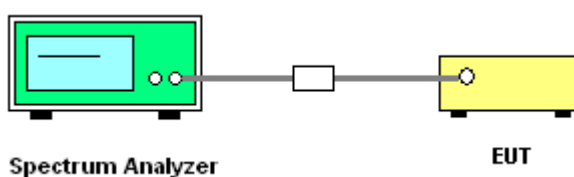
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
5. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Test Mode :	802.11b	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	9.56	0.5	Pass
06	2437	10.04	0.5	Pass
11	2462	10.04	0.5	Pass

Test Mode :	802.11g	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.56	0.5	Pass
06	2437	16.52	0.5	Pass
11	2462	16.52	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.80	0.5	Pass
06	2437	17.80	0.5	Pass
11	2462	17.80	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	36.48	0.5	Pass
06	2437	36.40	0.5	Pass
09	2452	36.48	0.5	Pass

Test Mode :	802.11a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	16.52	0.5	Pass
157	5785	16.56	0.5	Pass
165	5825	16.56	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

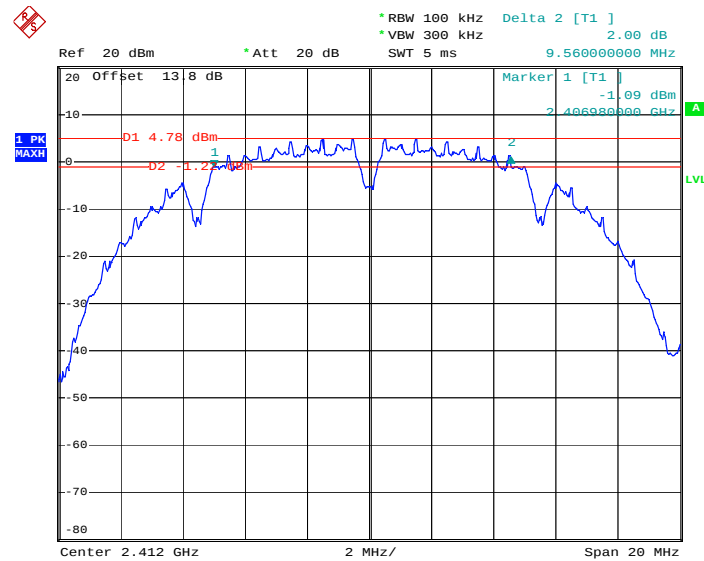
Channel	Frequency (MHz)	5GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	17.80	0.5	Pass
157	5785	17.80	0.5	Pass
165	5825	17.80	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
151	5755	36.60	0.5	Pass
159	5795	36.56	0.5	Pass

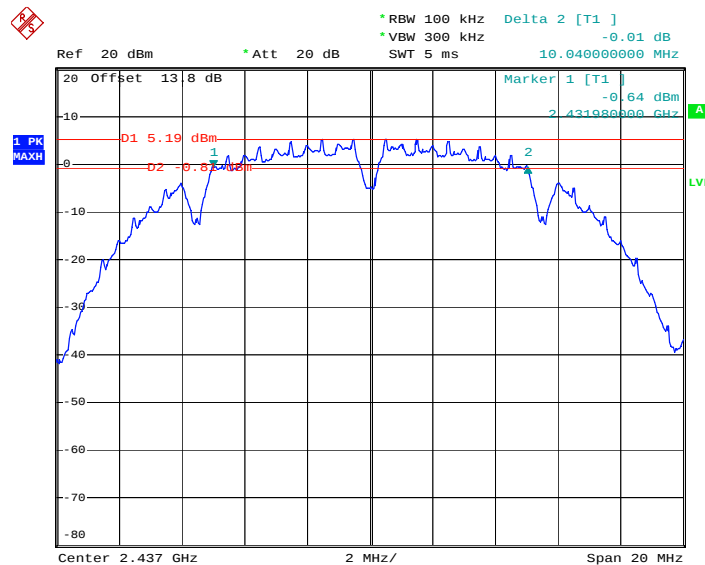
3.1.6 Test Result of 6dB Bandwidth Plots

6 dB Bandwidth Plot on 802.11b Channel 01

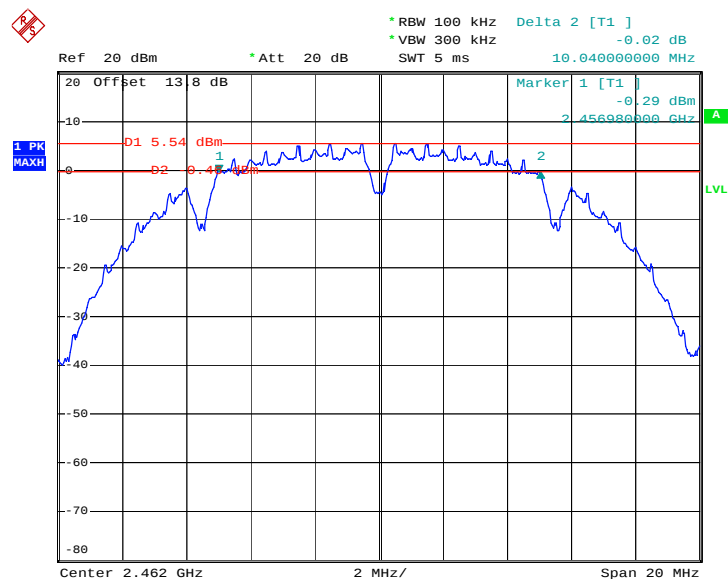


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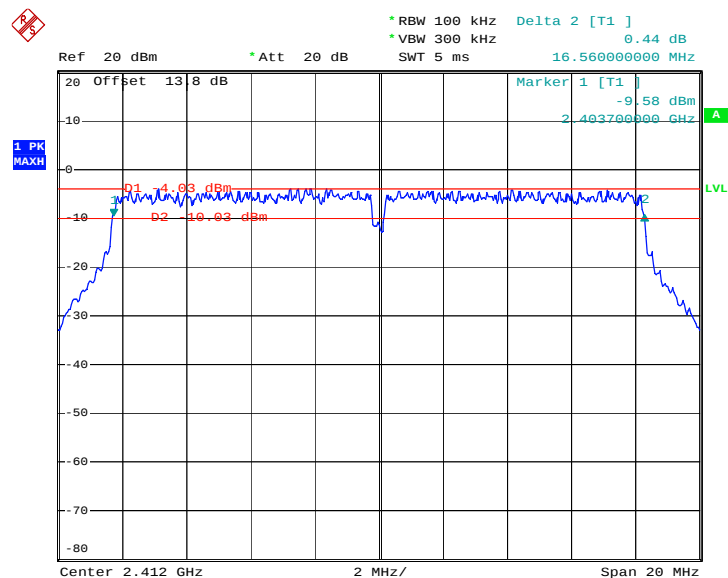
6 dB Bandwidth Plot on 802.11b Channel 06



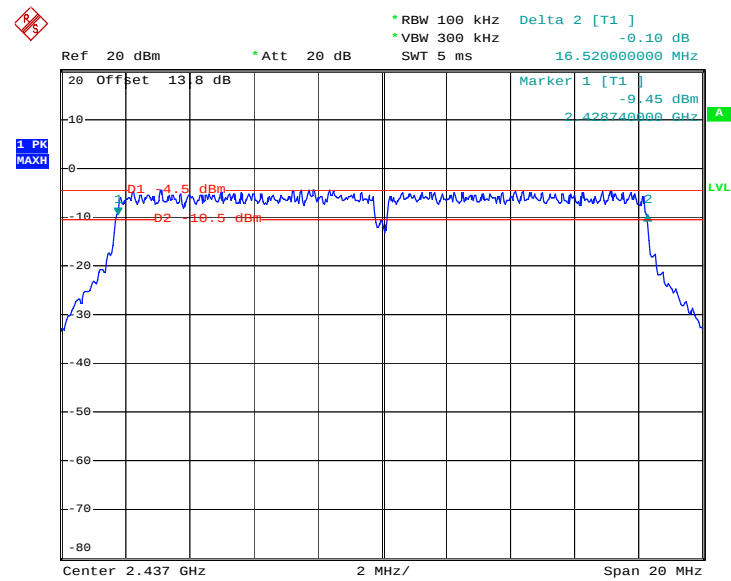
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6 dB Bandwidth Plot on 802.11b Channel 11


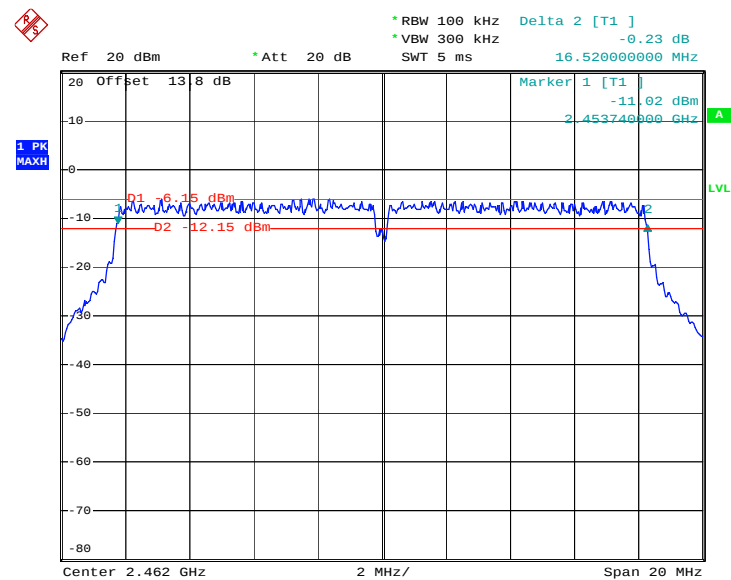
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6 dB Bandwidth Plot on 802.11g Channel 01


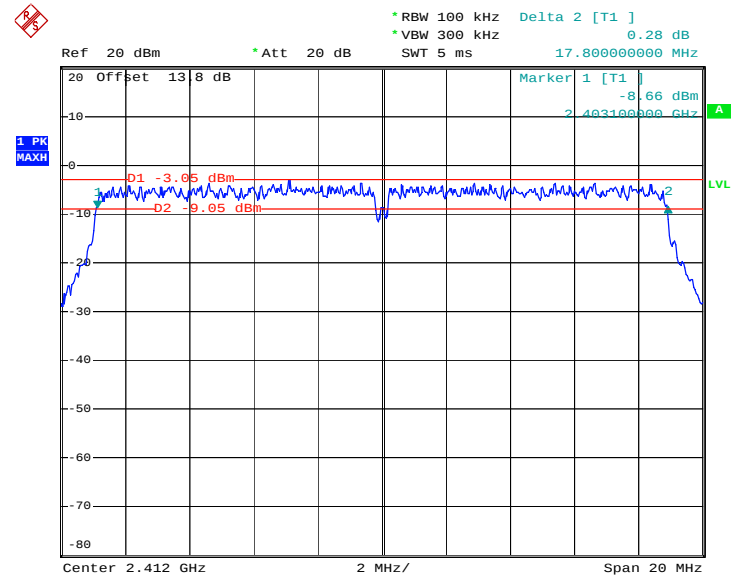
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6 dB Bandwidth Plot on 802.11g Channel 06


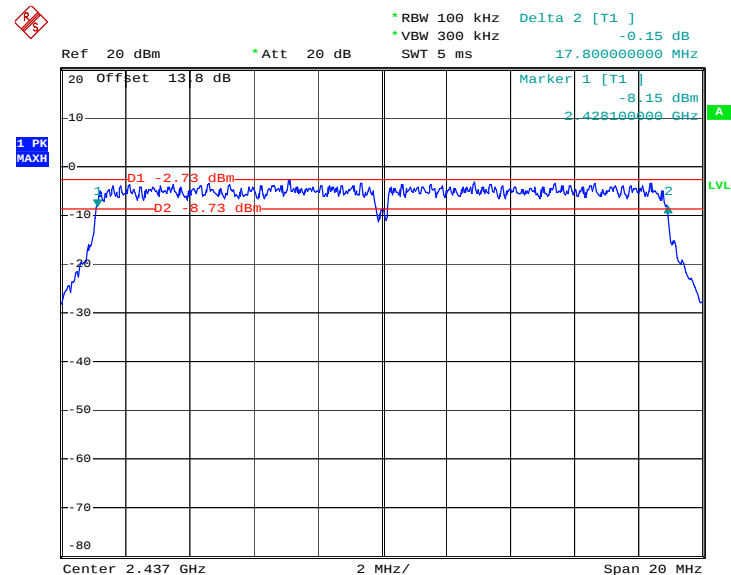
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6 dB Bandwidth Plot on 802.11g Channel 11


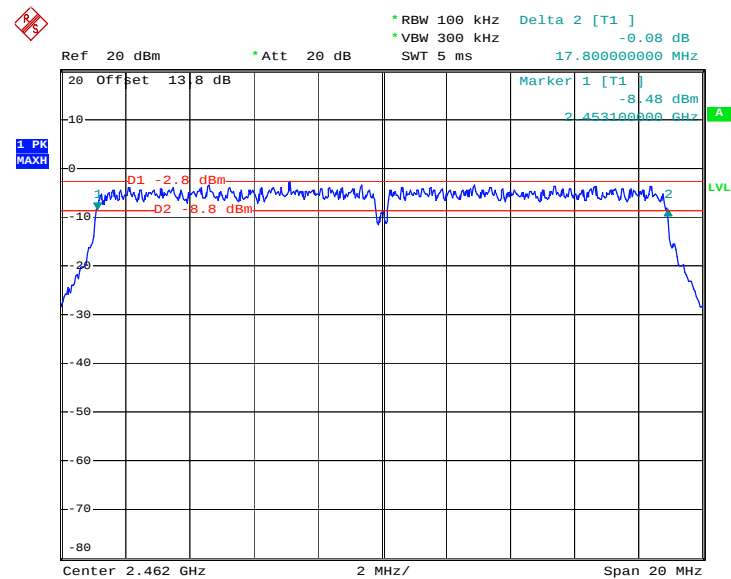
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6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 01


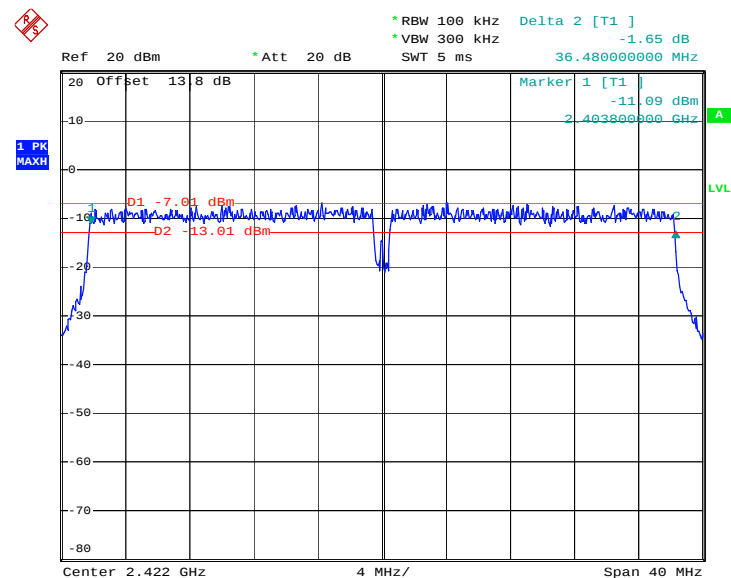
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6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 06


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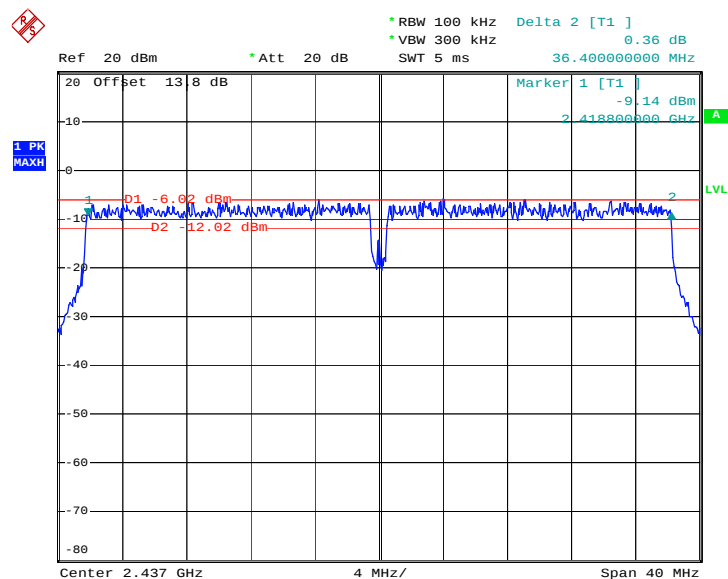
6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 11


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6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 03


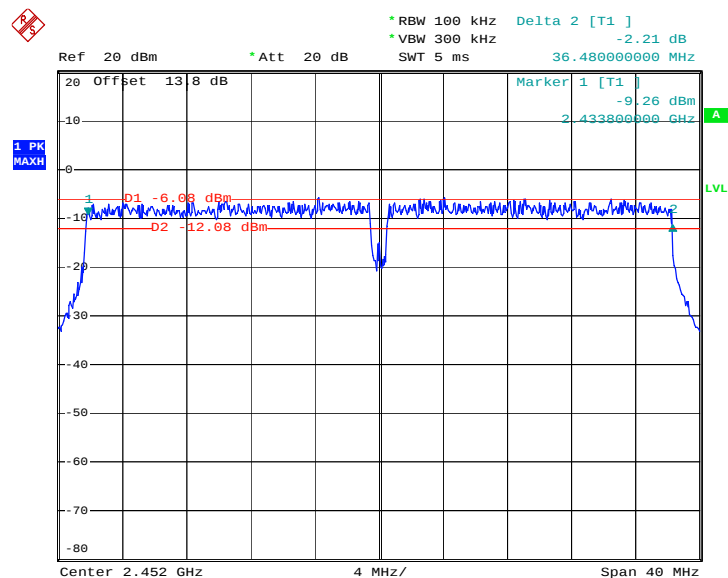
Date: 22.JAN.2013 23:37:53

6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 06

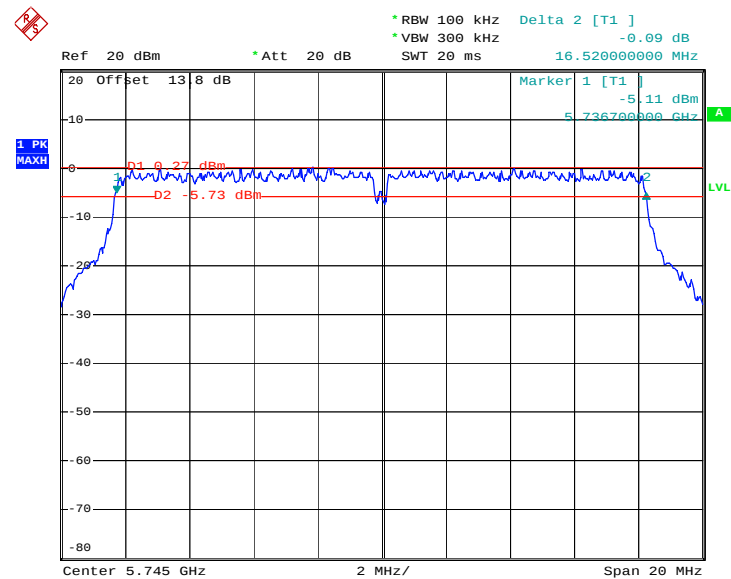


Date: 22.JAN.2013 23:40:35

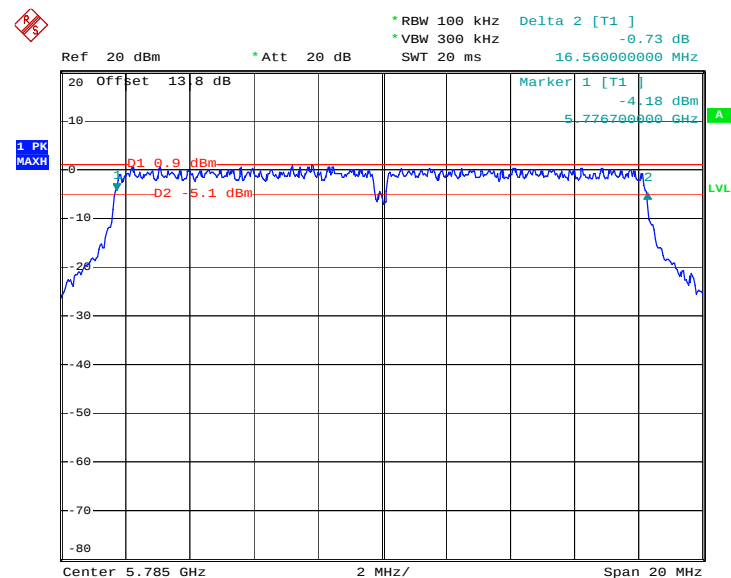
6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 09



Date: 22.JAN.2013 23:43:53

6 dB Bandwidth Plot on 802.11a Channel 149


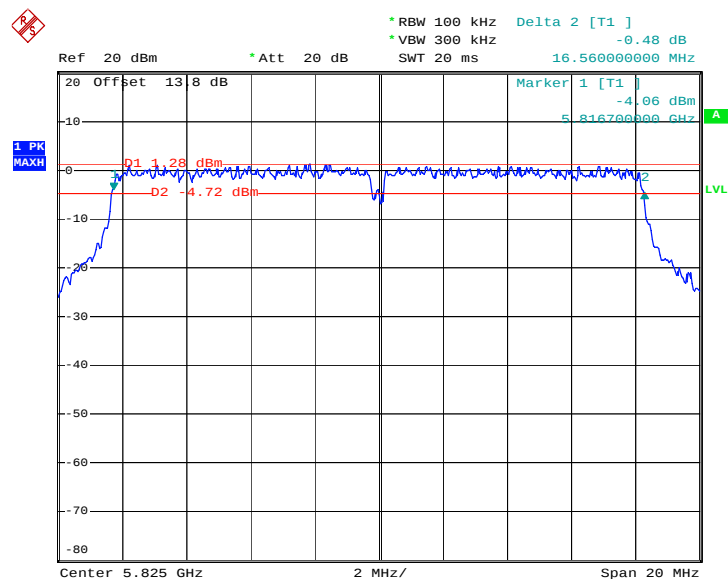
Date: 30.JAN.2013 02:17:33

6 dB Bandwidth Plot on 802.11a Channel 157


Date: 30.JAN.2013 02:05:34

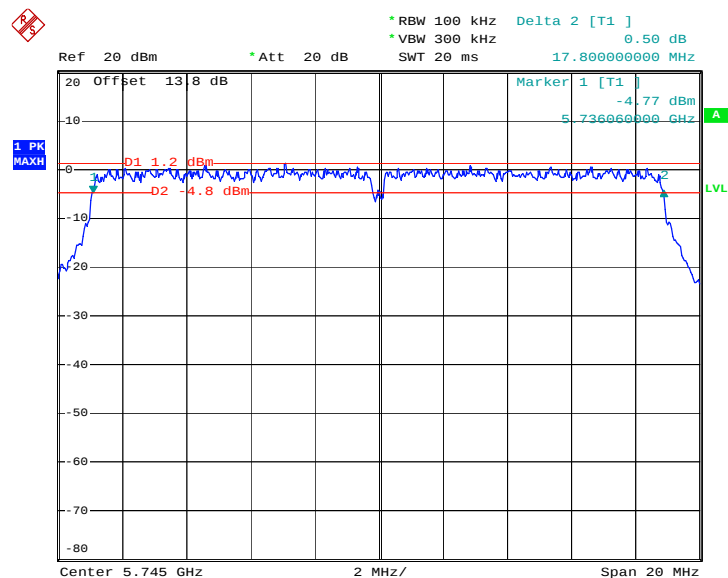


6 dB Bandwidth Plot on 802.11a Channel 165

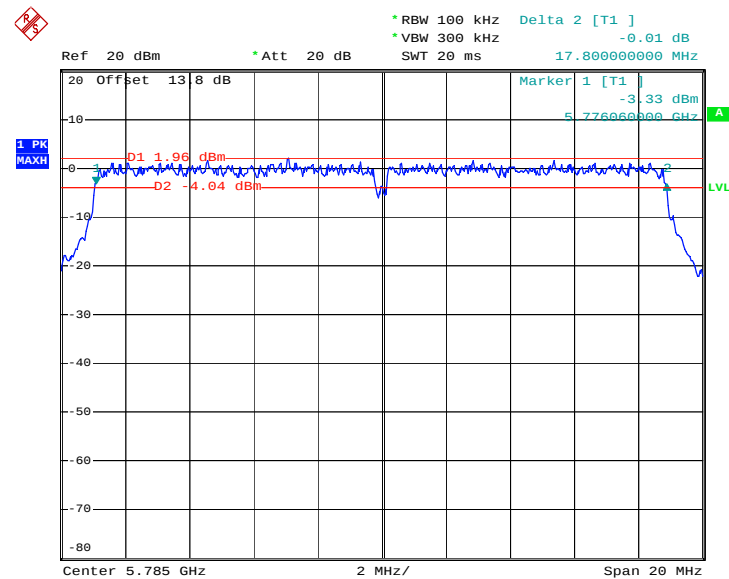


Date: 30.JAN.2013 02:08:48

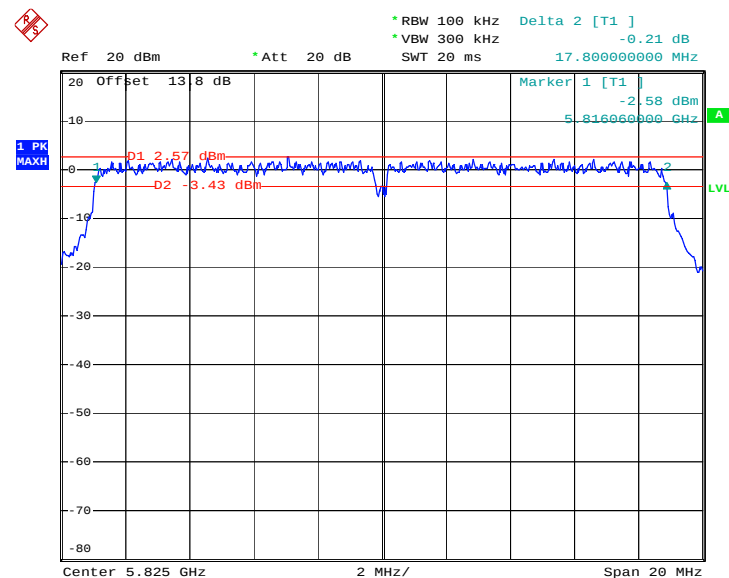
6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 149



Date: 30.JAN.2013 02:22:00

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 157


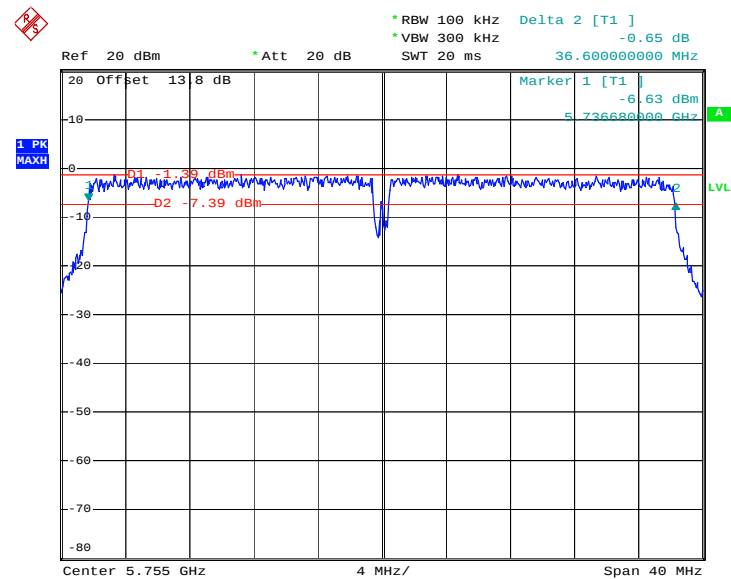
Date: 30.JAN.2013 02:26:12

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 165


Date: 30.JAN.2013 02:31:15

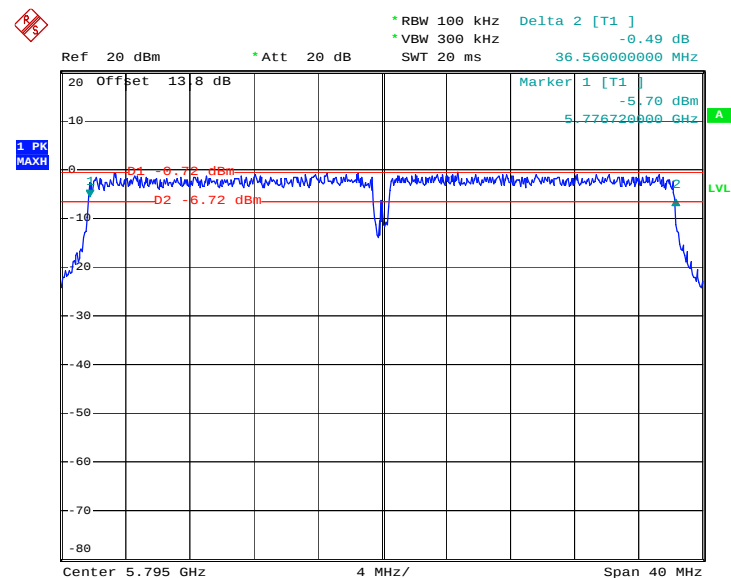


6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 151



Date: 30.JAN.2013 02:34:06

6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 159



Date: 30.JAN.2013 02:37:01

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, the limit for peak output power is 30dBm. If transmitting Antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the Antenna exceeds 6dBi.

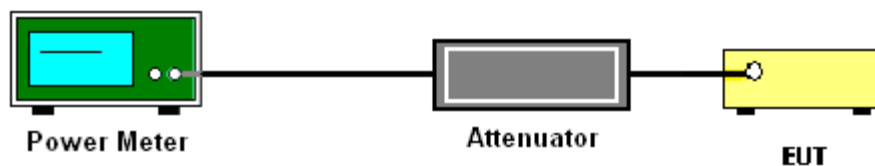
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Test Mode :	802.11b	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.96	30	Pass
06	2437	18.62	30	Pass
11	2462	18.23	30	Pass

Test Mode :	802.11g	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.23	30	Pass
06	2437	20.05	30	Pass
11	2462	20.12	30	Pass

Test Mode :	802.11n HT20	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.17	30	Pass
06	2437	20.27	30	Pass
11	2462	20.33	30	Pass

Test Mode :	802.11n HT40	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	18.02	30	Pass
06	2437	19.21	30	Pass
09	2452	20.29	30	Pass

Test Mode :	802.11 a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	21.53	30	Pass
157	5785	21.46	30	Pass
165	5825	21.40	30	Pass

Test Mode :	802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	20.86	30	Pass
157	5785	21.36	30	Pass
165	5825	21.66	30	Pass

Test Mode :	802.11n HT40	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
151	5755	21.36	30	Pass
159	5795	21.39	30	Pass

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	15.66
06	2437	16.96
11	2462	15.92

Test Mode :	802.11g	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	9.62
06	2437	10.65
11	2462	11.02

Test Mode :	802.11n HT20	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Average Output Power (dBm)
01	2412	10.12
06	2437	11.29
11	2462	11.47

Test Mode :	802.11n HT40	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Average Output Power (dBm)
03	2422	9.13
06	2437	10.17
09	2452	11.12

Test Mode :	802.11a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	5GHz 802.11a Average Output Power (dBm)
149	5745	13.49
157	5785	14.40
165	5825	14.58

Test Mode :	802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	5GHz 802.11n HT20 Average Output Power (dBm)
149	5745	12.79
157	5785	14.21
165	5825	14.43

Test Mode :	802.11n HT40	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	5GHz 802.11n HT40 Average Output Power (dBm)
151	5755	13.95
159	5795	14.38

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

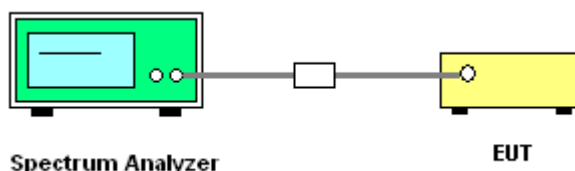
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 9.1 Option 1 of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. The Measured power density (dBm)/ 100KHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11b	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	4.50	-13.69	8	Pass
06	2437	5.14	-12.98	8	Pass
11	2462	5.41	-12.75	8	Pass

Test Mode :	802.11g	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-4.18	-18.29	8	Pass
06	2437	-4.72	-18.70	8	Pass
11	2462	-6.52	-20.22	8	Pass

Test Mode :	802.11n HT20	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-3.37	-14.33	8	Pass
06	2437	-3.22	-14.91	8	Pass
11	2462	-3.46	-15.34	8	Pass

Test Mode :	802.11n HT40	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
03	2422	-7.52	-19.22	8	Pass
06	2437	-6.30	-18.88	8	Pass
09	2452	-6.19	-18.72	8	Pass

Test Mode :	802.11a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11a Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
149	5745	-0.16	-10.05	8	Pass
157	5785	0.43	-10.73	8	Pass
165	5825	0.83	-10.48	8	Pass

Test Mode :	802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
149	5745	0.86	-11.50	8	Pass
157	5785	1.34	-11.05	8	Pass
165	5825	2.34	-10.90	8	Pass

Test Mode :	802.11n HT40	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

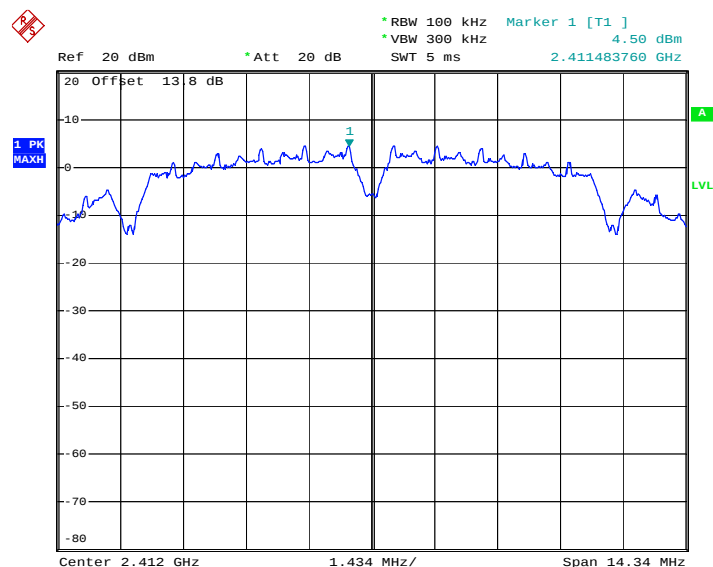
Channel	Frequency (MHz)	5GHz 802.11n HT40 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
151	5755	-1.63	-11.37	8	Pass
159	5795	-1.21	-11.30	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. The Measured power density (dBm)/ 100KHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.

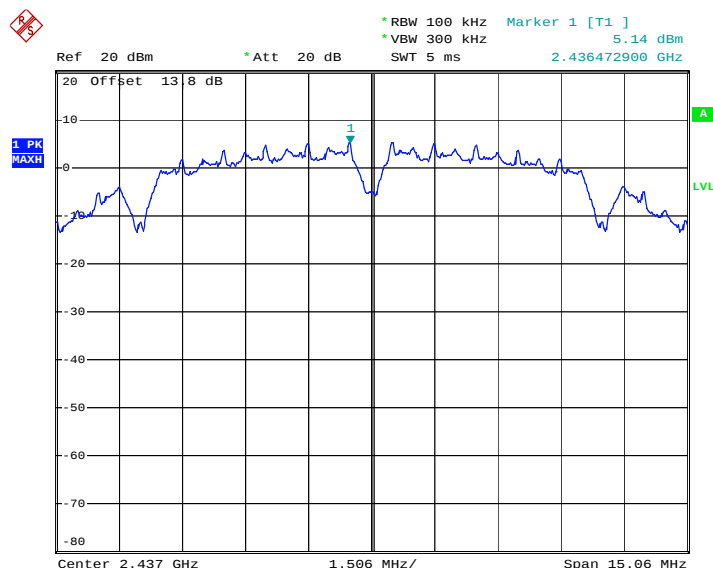
3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on 802.11b Channel 01

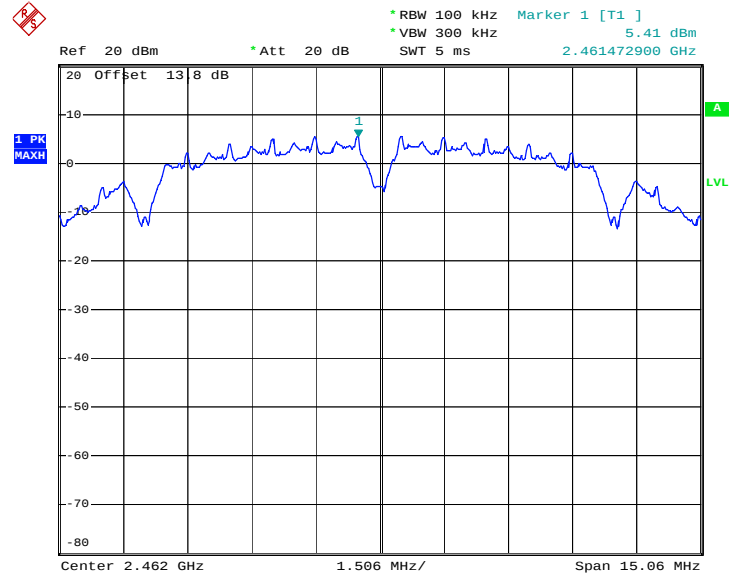


Date: 22.JAN.2013 22:43:20

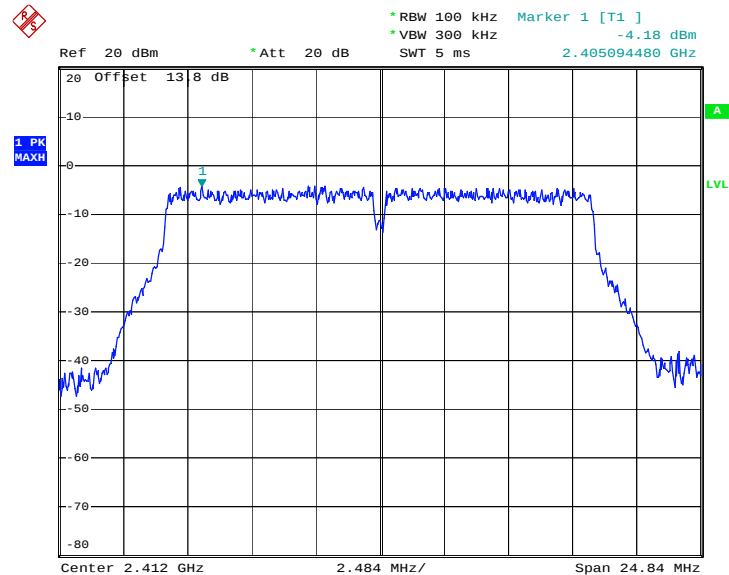
PSD 100kHz Plot on 802.11b Channel 06



Date: 22.JAN.2013 22:49:14

PSD 100kHz Plot on 802.11b Channel 11


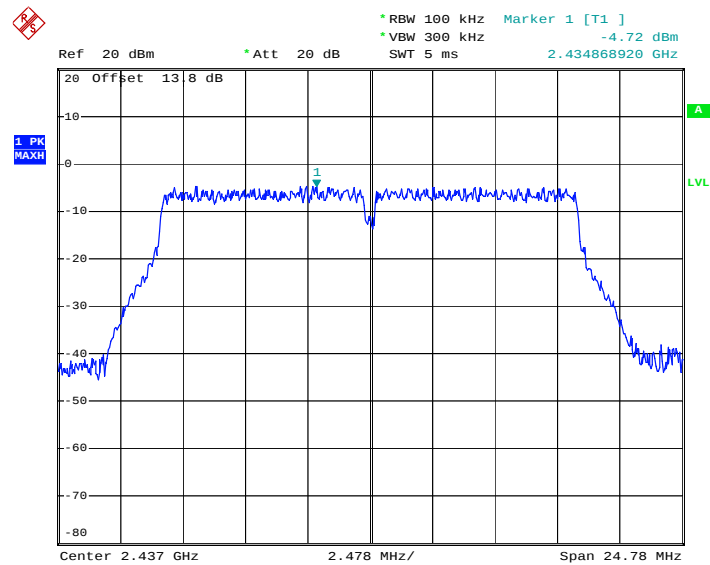
Date: 22.JAN.2013 22:52:52

PSD 100kHz Plot on 802.11g Channel 01


Date: 22.JAN.2013 22:57:49

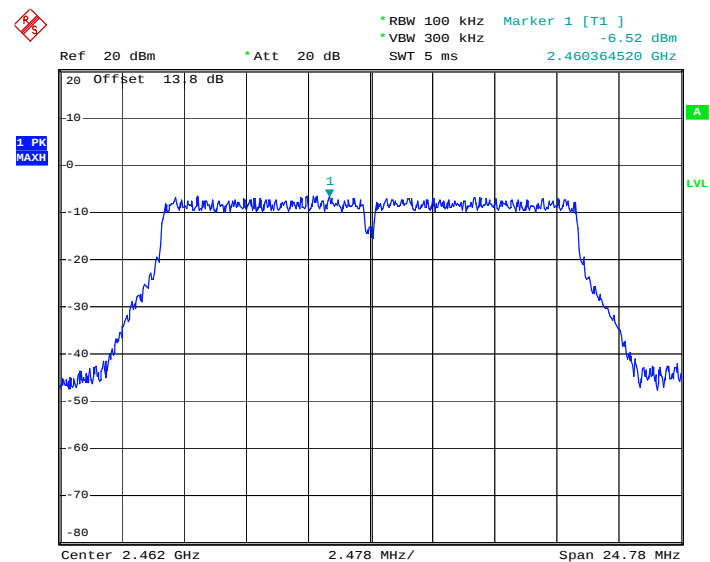


PSD 100kHz Plot 802.11g Channel 06

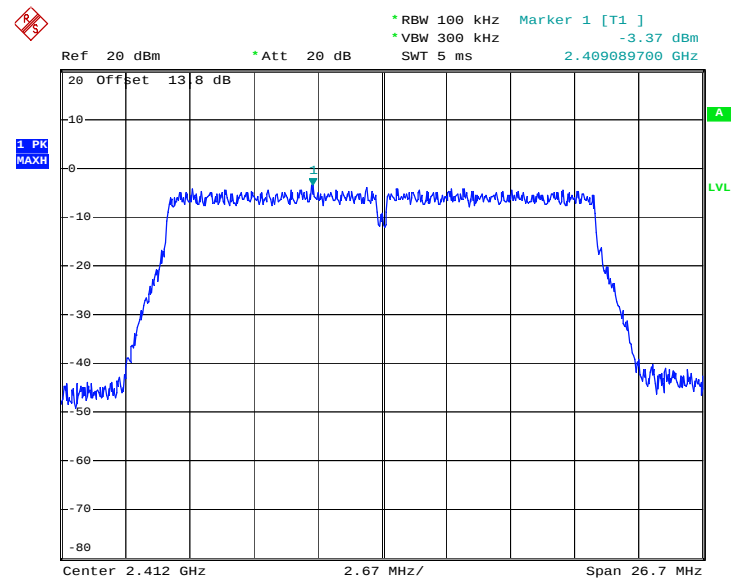


Date: 22.JAN.2013 23:00:46

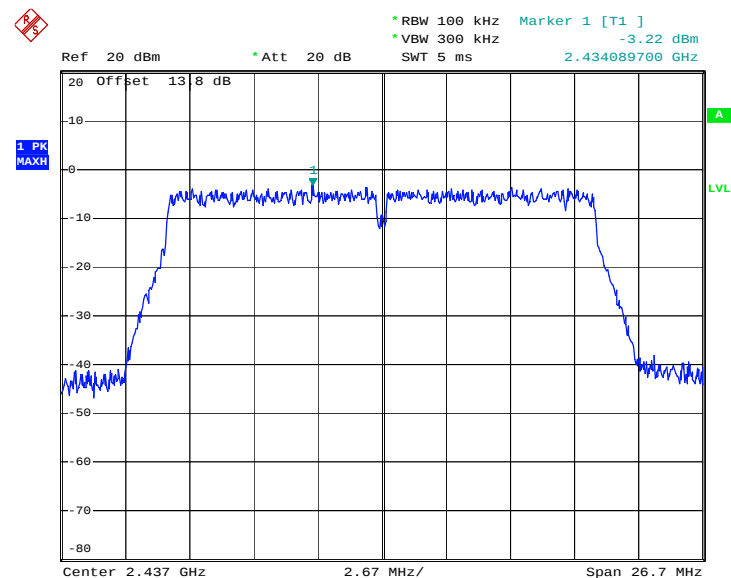
PSD 100kHz Plot 802.11g Channel 11



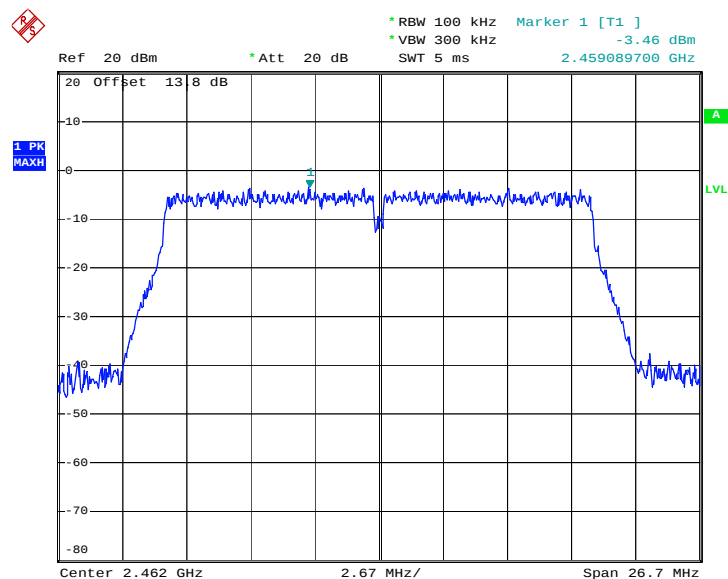
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PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 01


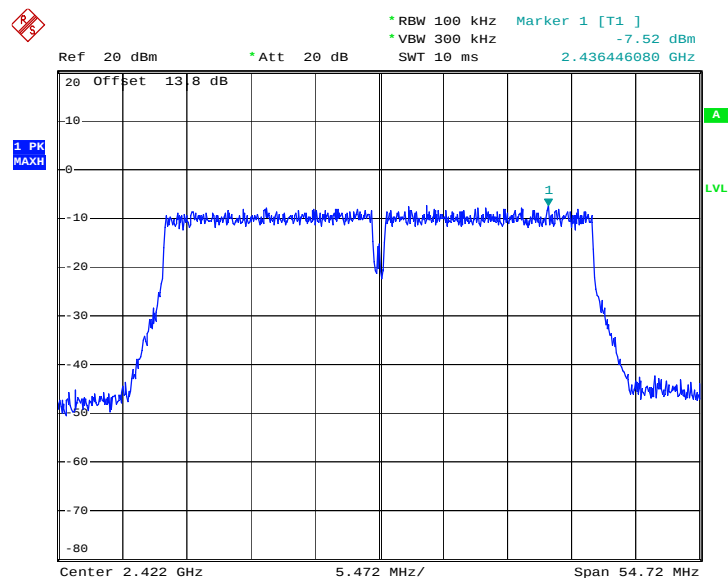
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PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 06


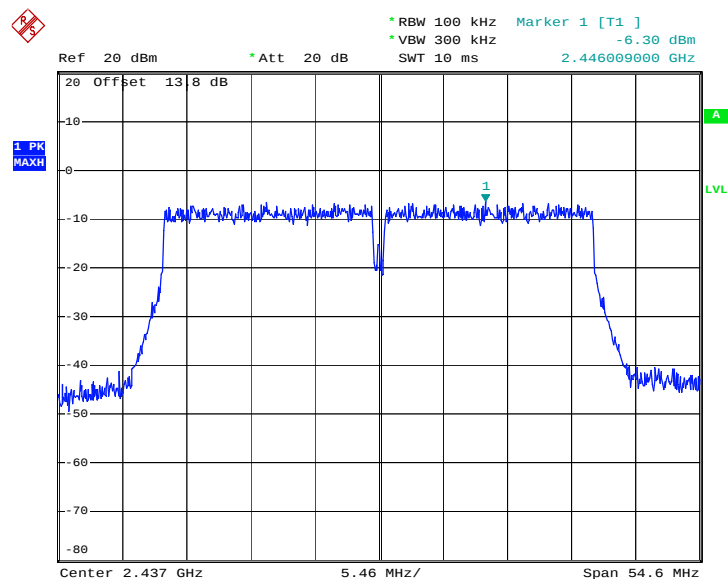
Date: 22.JAN.2013 23:22:01

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 11


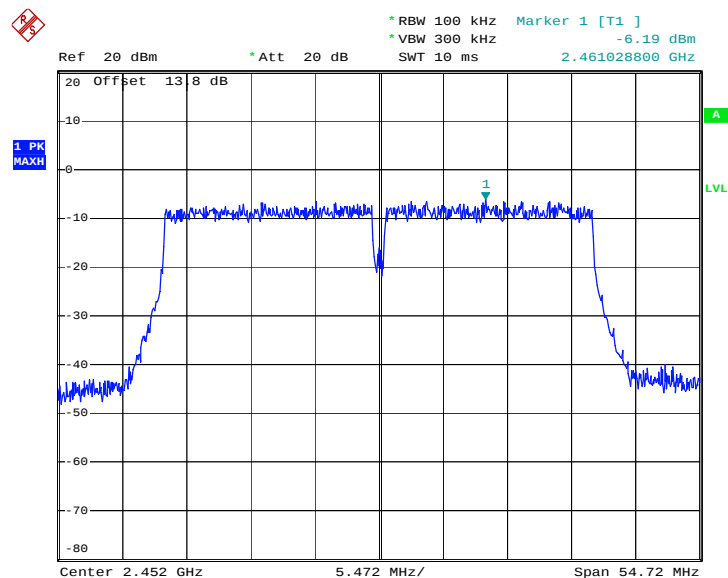
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PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 03


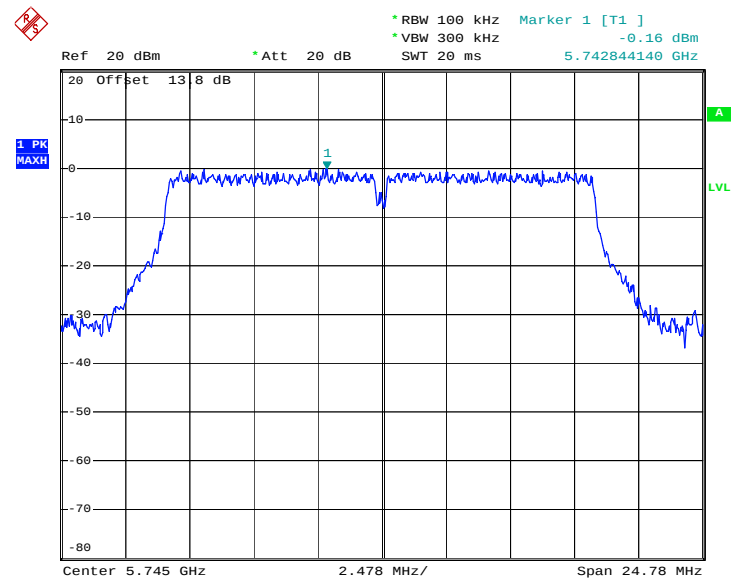
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PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 06


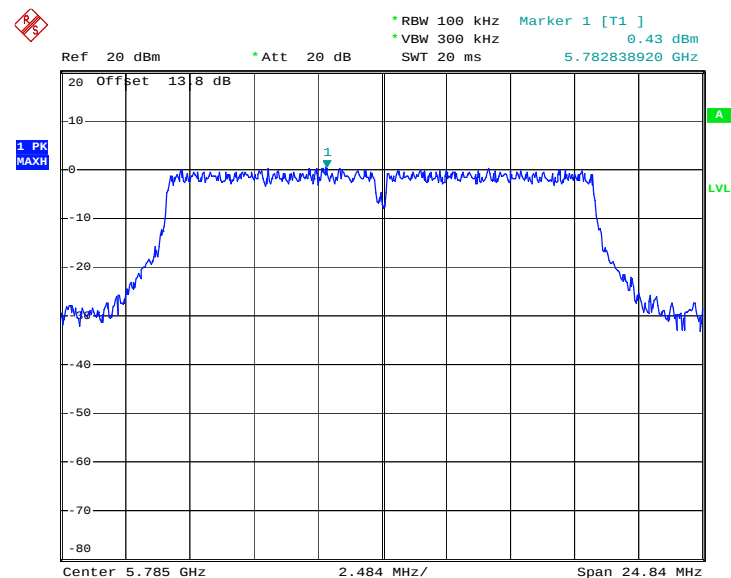
Date: 22.JAN.2013 23:41:09

PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 09


Date: 22.JAN.2013 23:44:27

PSD 100kHz Plot on 802.11a Channel 149


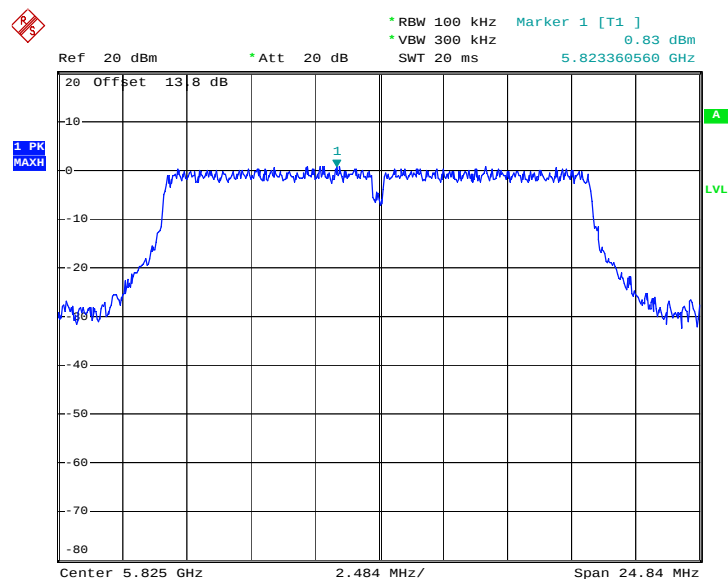
Date: 30.JAN.2013 02:18:04

PSD 100kHz Plot on 802.11a Channel 157


Date: 30.JAN.2013 02:06:05

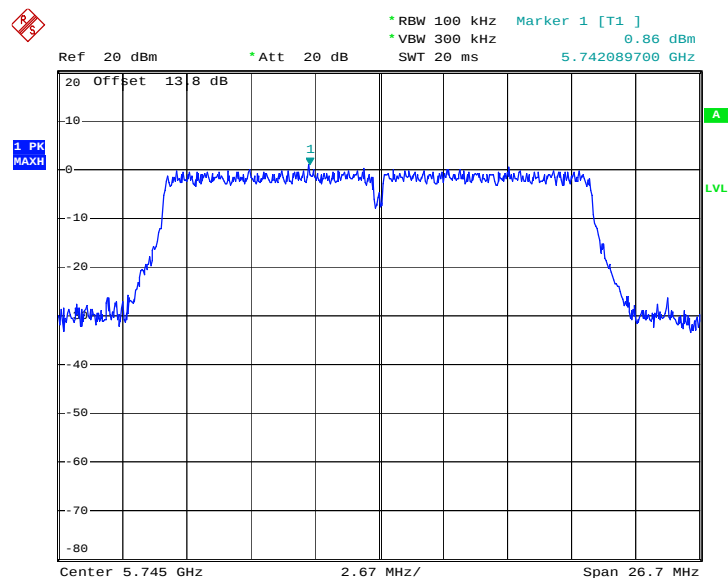


PSD 100kHz Plot on 802.11a Channel 165

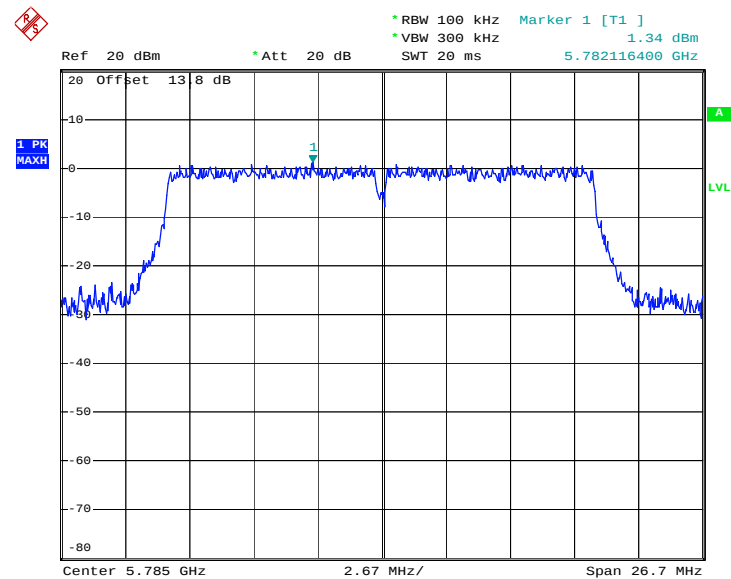


Date: 30.JAN.2013 02:09:19

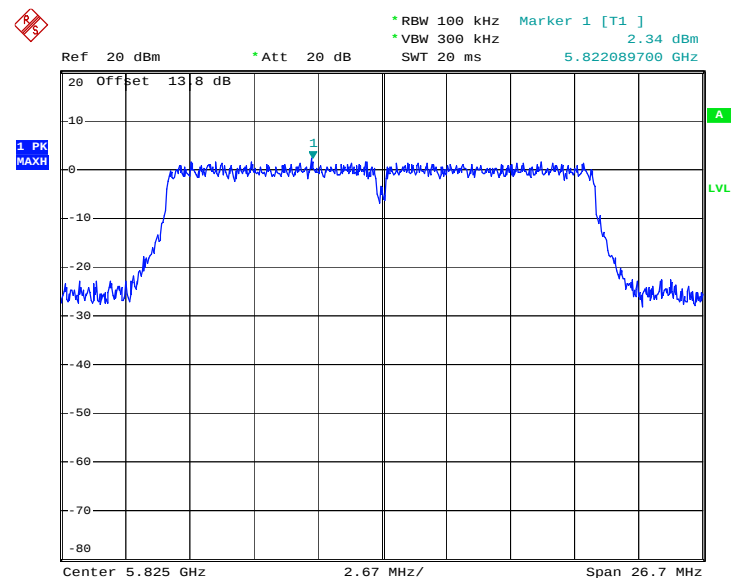
PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 149



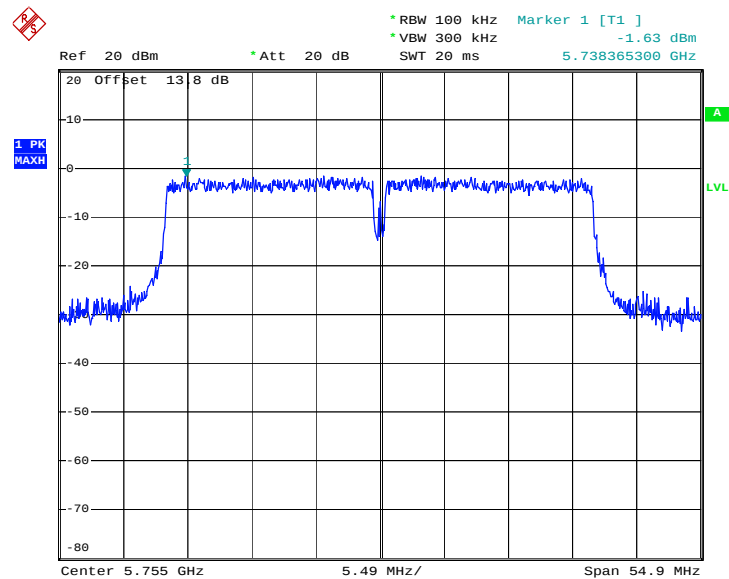
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PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 157


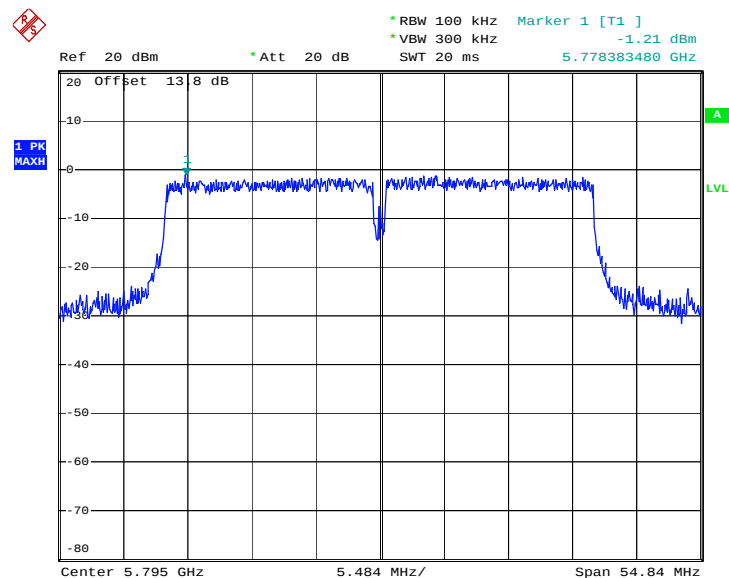
Date: 30.JAN.2013 02:26:43

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 165


Date: 30.JAN.2013 02:31:46

PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 151


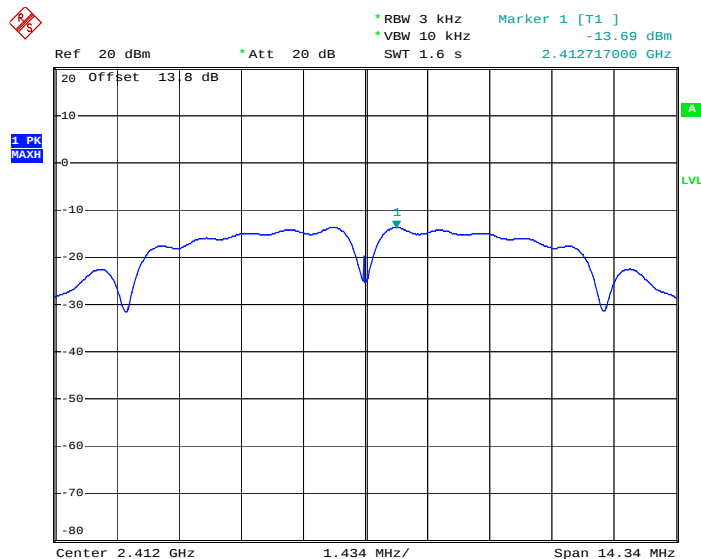
Date: 30.JAN.2013 02:34:40

PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 159


Date: 30.JAN.2013 02:37:35

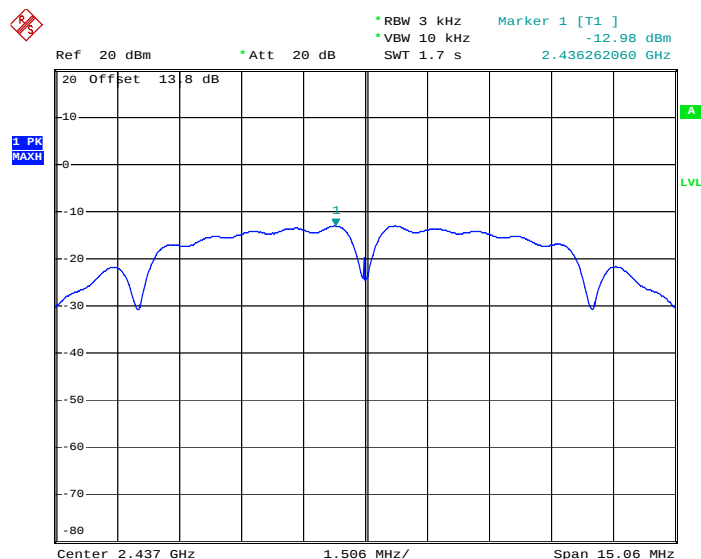
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on 802.11b Channel 01

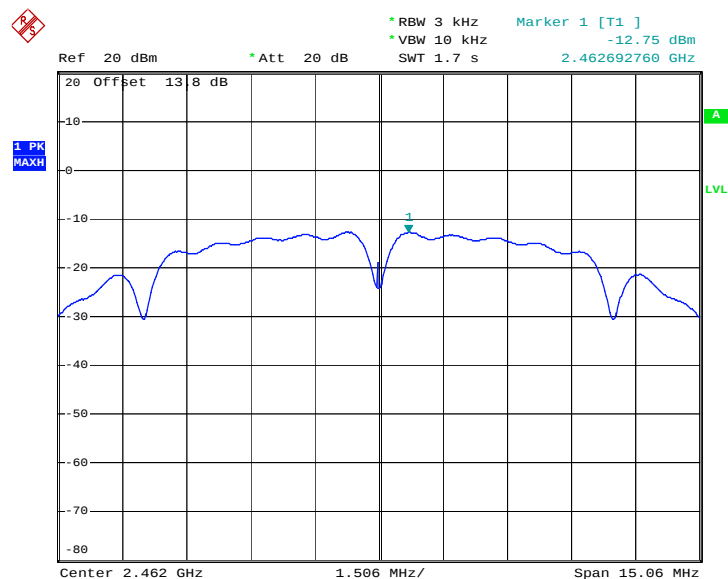


Date: 22.JAN.2013 22:43:10

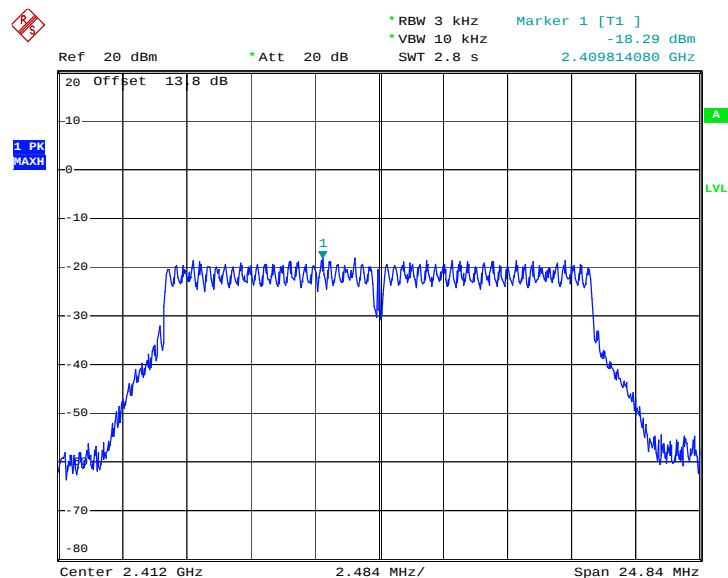
PSD 3kHz Plot on 802.11b Channel 06



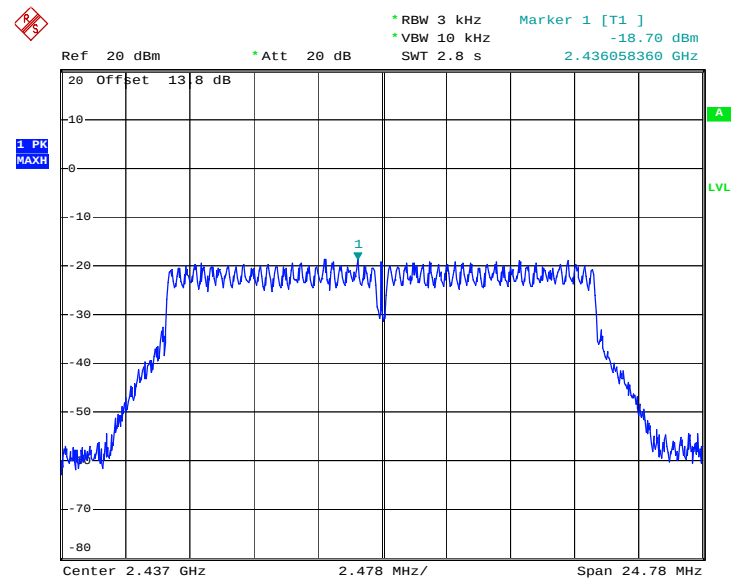
Date: 22.JAN.2013 22:49:04

PSD 3kHz Plot on 802.11b Channel 11


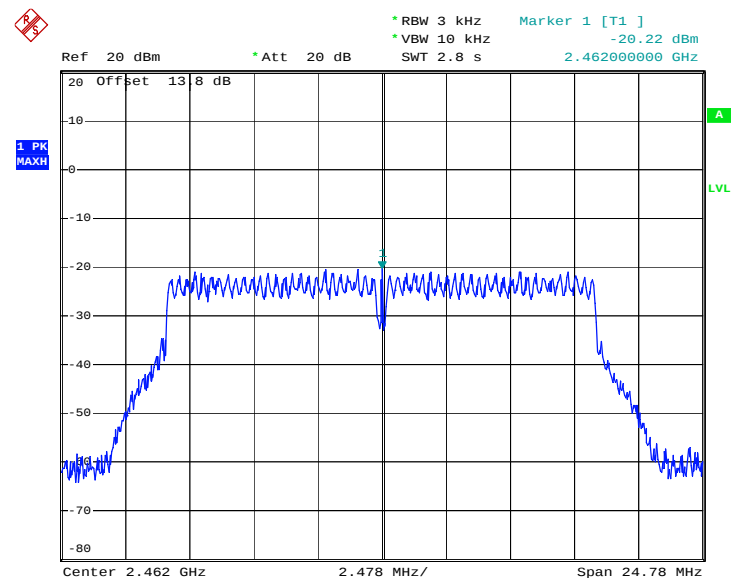
Date: 22.JAN.2013 22:52:42

PSD 3kHz Plot on 802.11g Channel 01


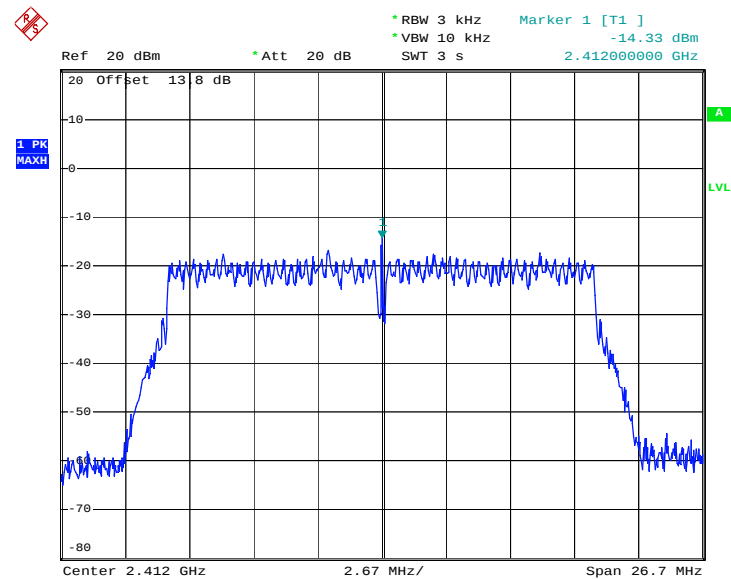
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PSD 3kHz Plot on 802.11g Channel 06


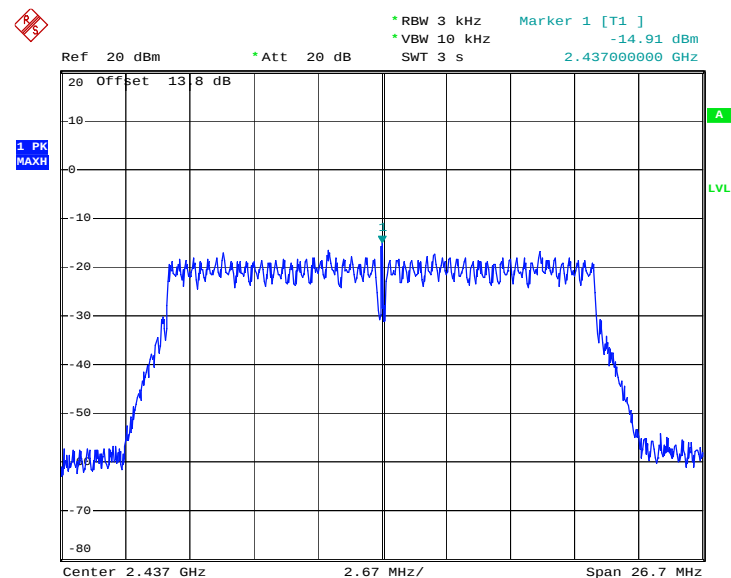
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PSD 3kHz Plot on 802.11g Channel 11


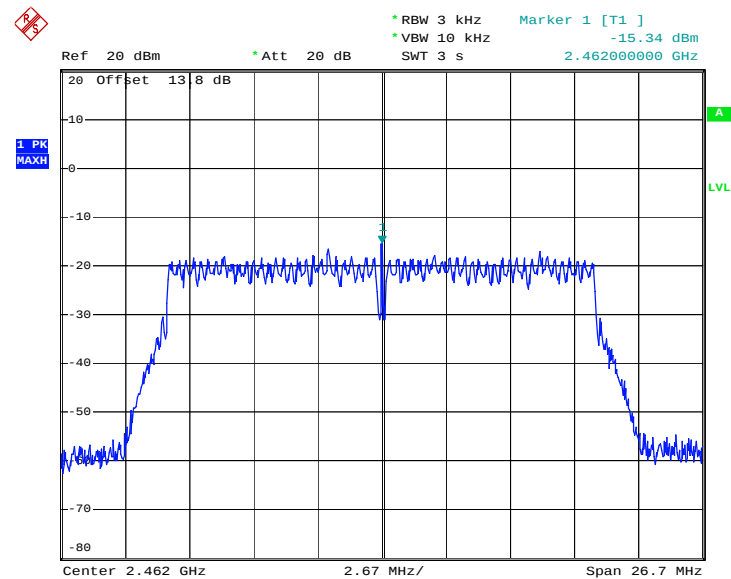
Date: 22.JAN.2013 23:07:29

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 01


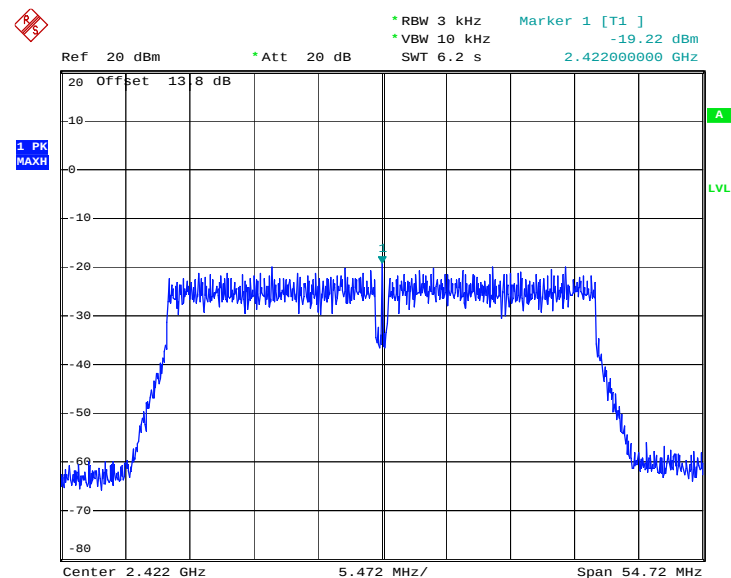
Date: 22.JAN.2013 23:18:00

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 06


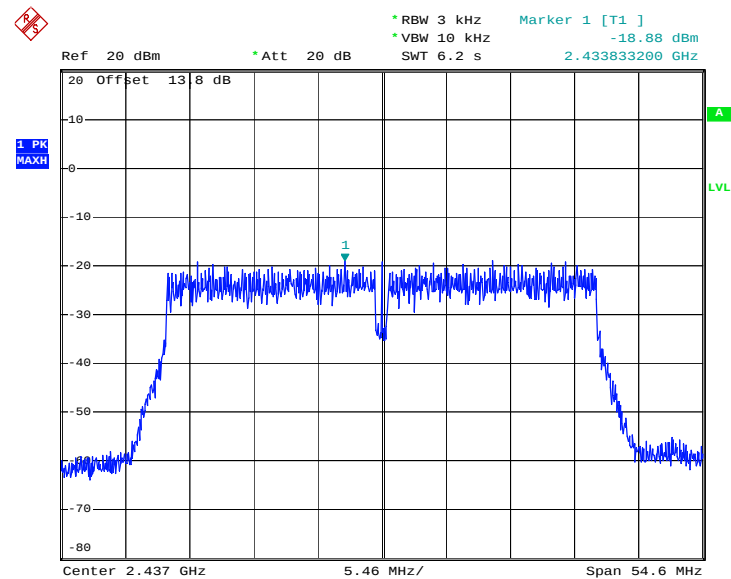
Date: 22.JAN.2013 23:21:51

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 11


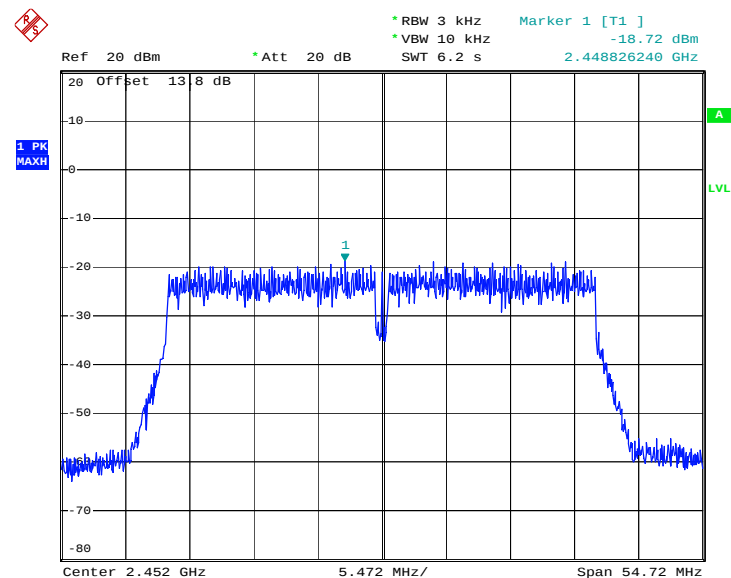
Date: 22.JAN.2013 23:24:22

PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 03


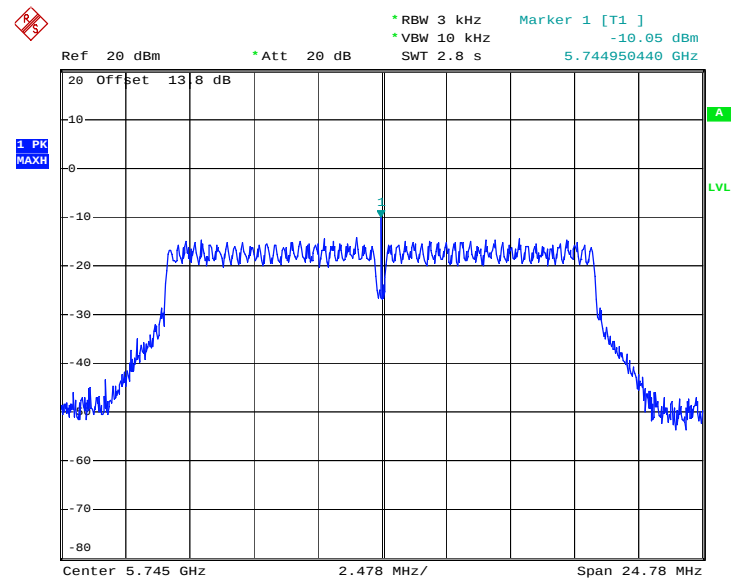
Date: 22.JAN.2013 23:38:17

PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 06


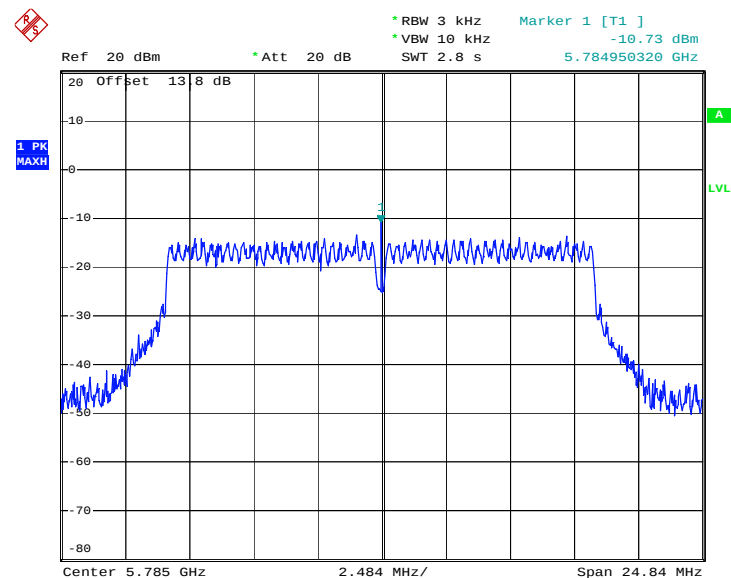
Date: 22.JAN.2013 23:40:59

PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 09


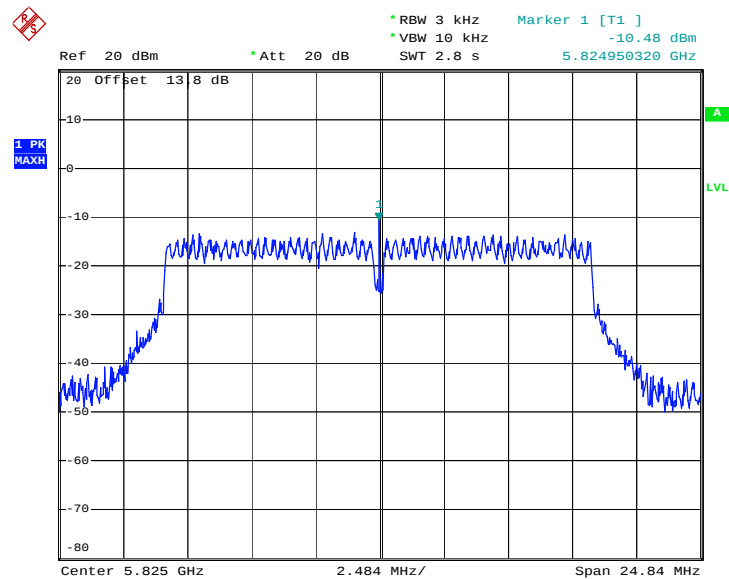
Date: 22.JAN.2013 23:44:17

PSD 3kHz Plot on 802.11a Channel 149


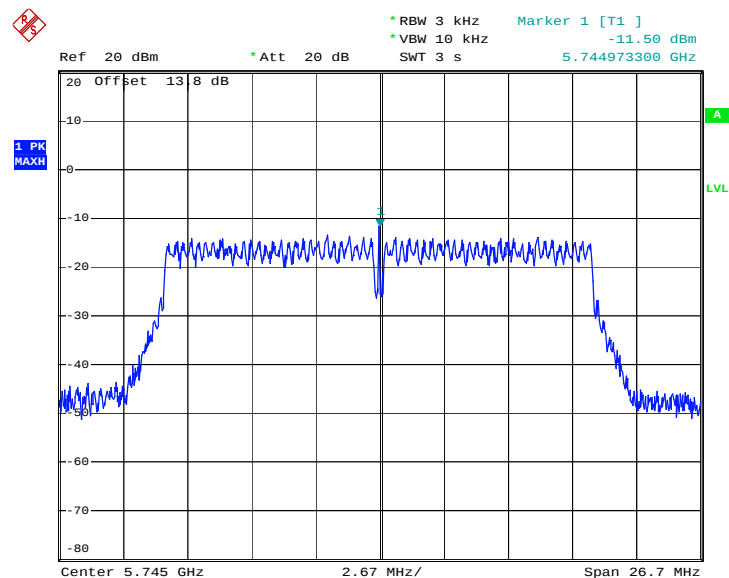
Date: 30.JAN.2013 02:17:54

PSD 3kHz Plot on 802.11a Channel 157


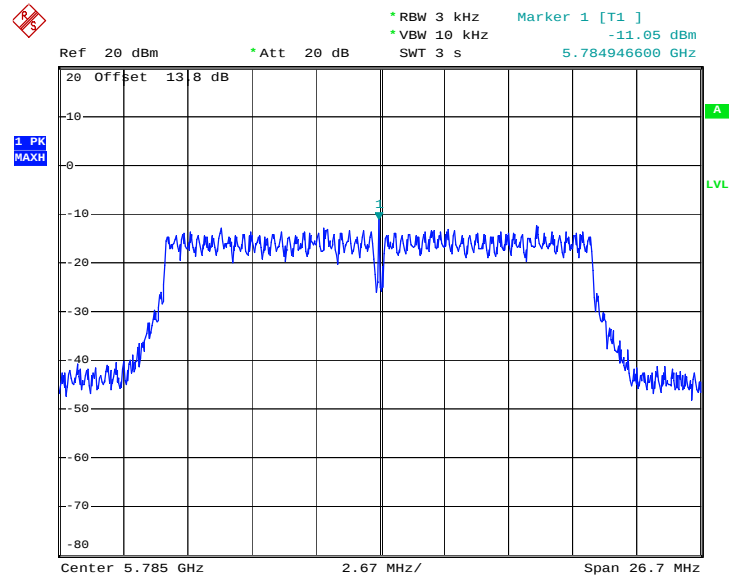
Date: 30.JAN.2013 02:05:55

PSD 3kHz Plot on 802.11a Channel 165


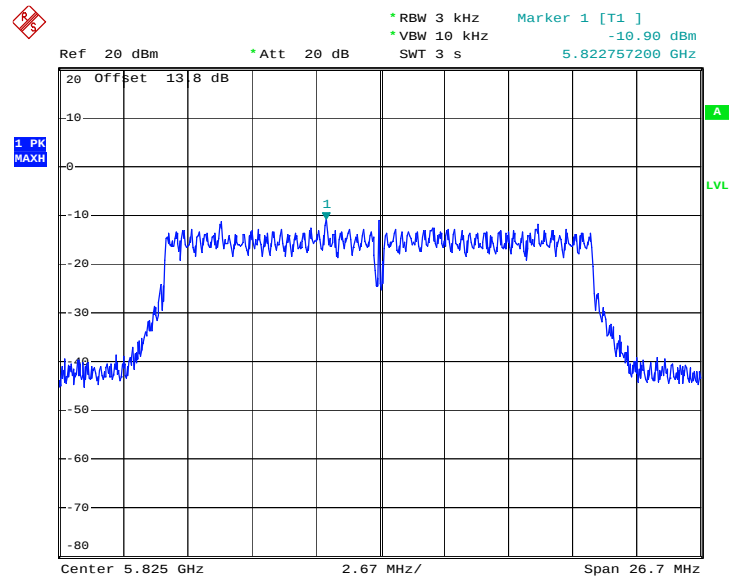
Date: 30.JAN.2013 02:09:09

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 149


Date: 30.JAN.2013 02:22:21

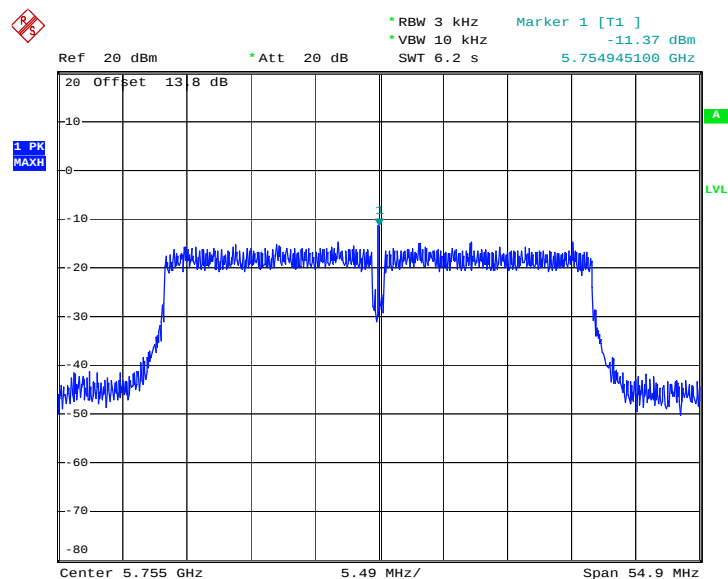
PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 157


Date: 30.JAN.2013 02:26:33

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 165


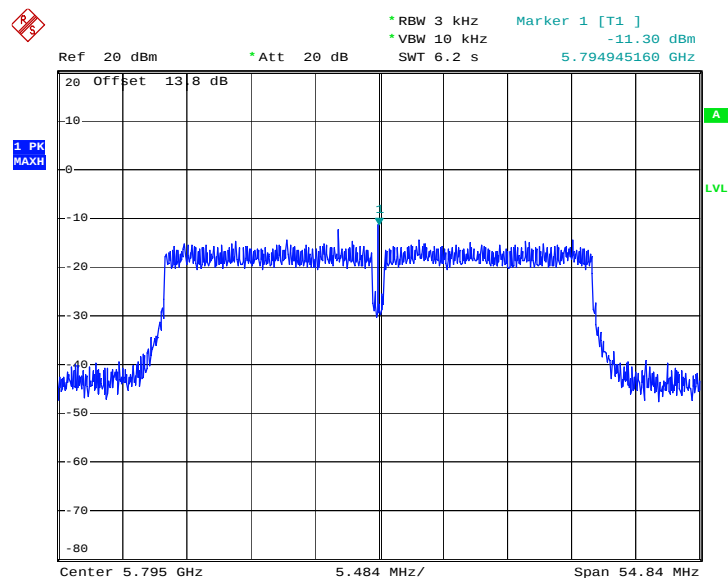
Date: 30.JAN.2013 02:31:36

PSD 3kHz Plot on 5GHz 802.11n HT40 Channel 151



Date: 30.JAN.2013 02:34:30

PSD 3kHz Plot on 5GHz 802.11n HT40 Channel 159



Date: 30.JAN.2013 02:37:25

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

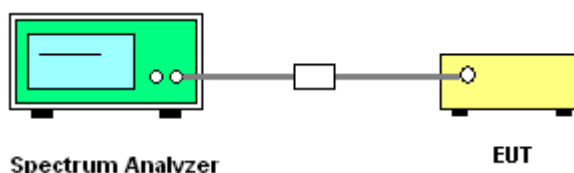
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

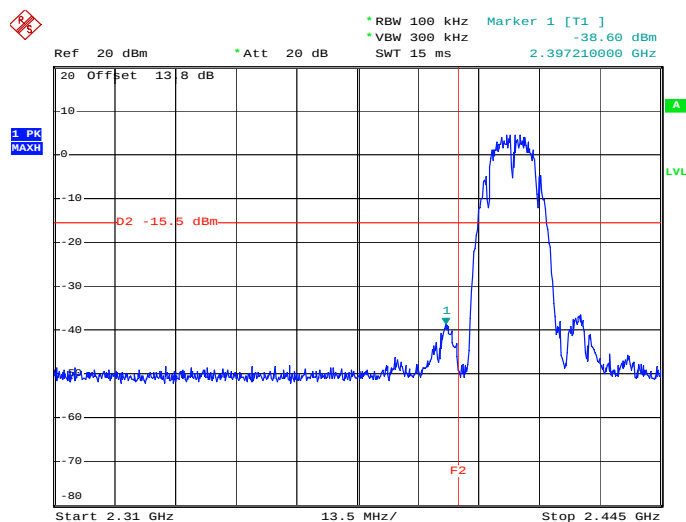
3.4.4 Test Setup



3.4.5 Test Result of Conducted Spurious at Band Edges

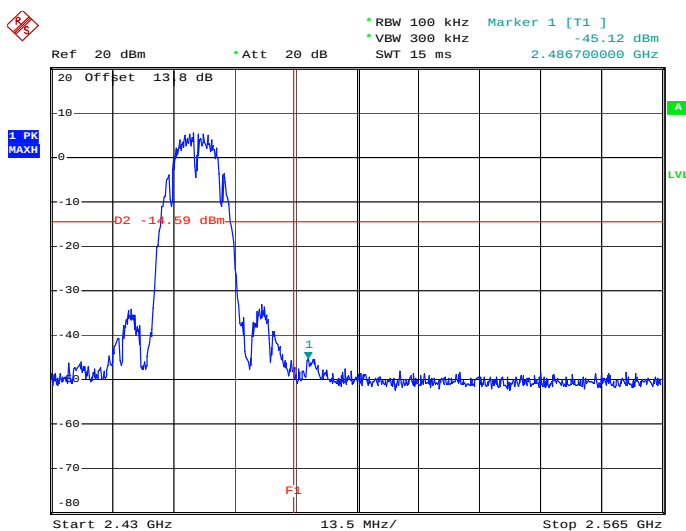
Test Mode :	802.11b	Temperature :	20~21℃
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11b Channel 01



Date: 22.JAN.2013 22:43:36

High Band Edge Plot on 802.11b Channel 11

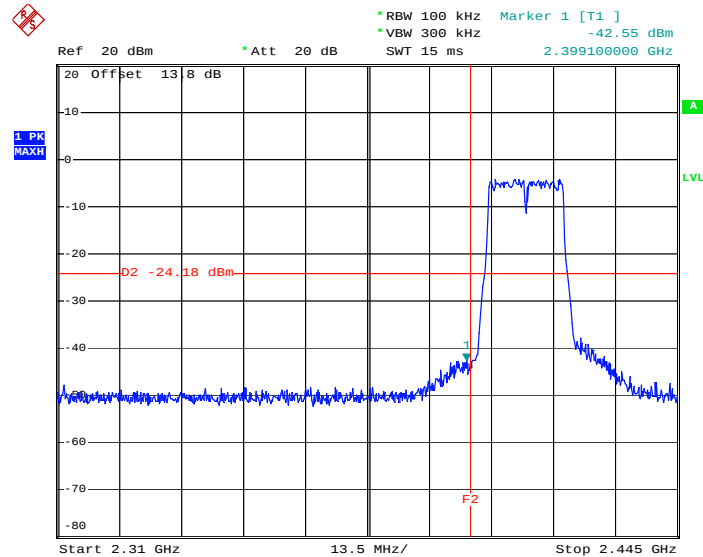


Date: 22.JAN.2013 22:53:08



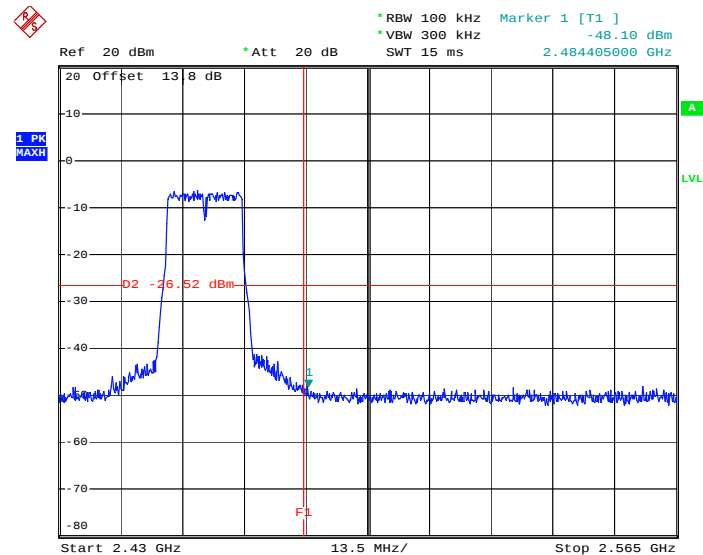
Test Mode :	802.11g	Temperature :	20~21°C
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11g Channel 01



Date: 22.JAN.2013 22:58:05

High Band Edge Plot on 802.11g Channel 11

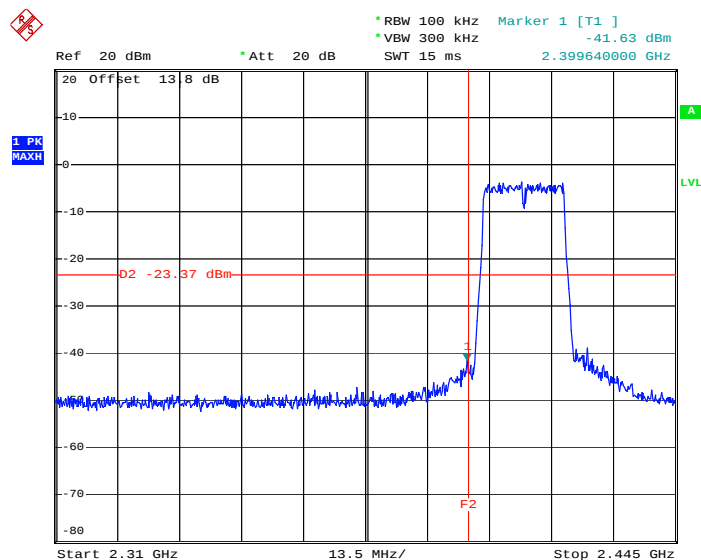


Date: 22.JAN.2013 23:07:55



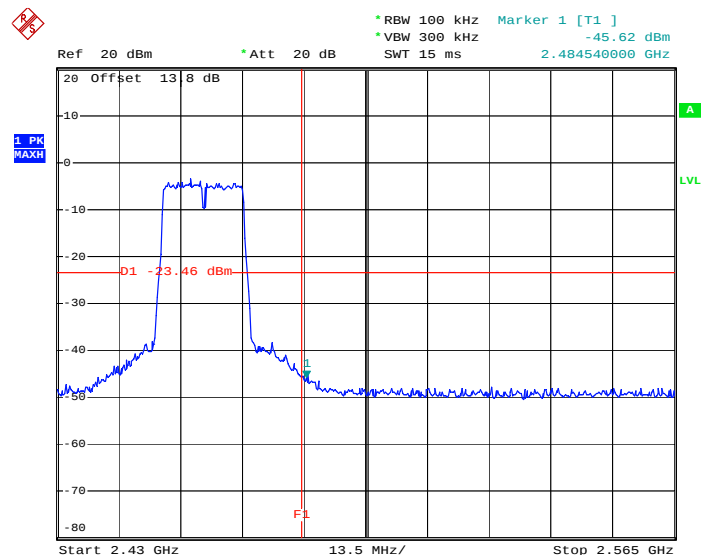
Test Mode :	802.11n HT20	Temperature :	20~21°C
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 2.4GHz 802.11n HT20 Channel 01



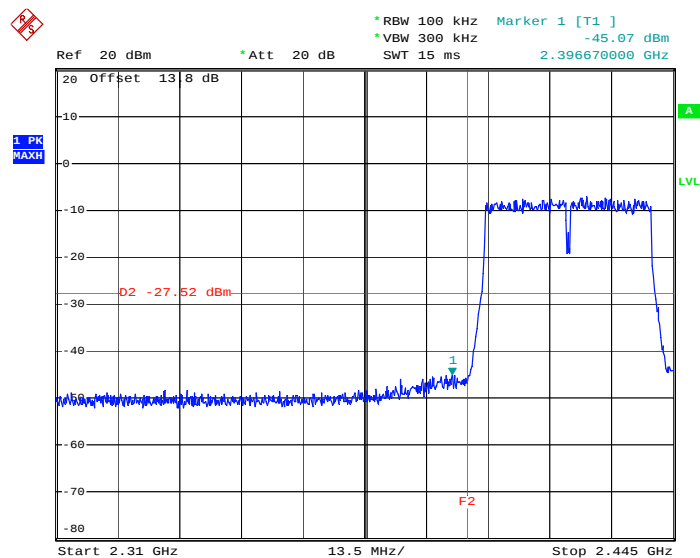
Date: 22.JAN.2013 23:18:26

High Band Edge Plot on 2.4GHz 802.11n HT20 Channel 11

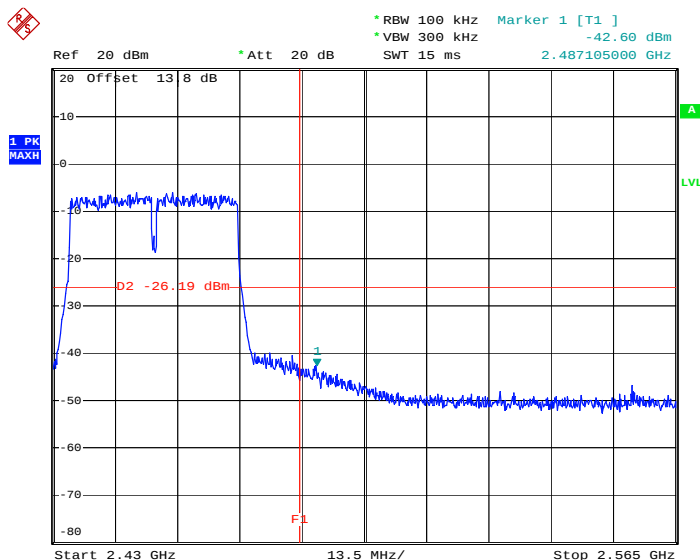


Date: 4.FEB.2013 23:47:30

Test Mode :	802.11n HT40	Temperature :	20~21℃
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	03 and 09	Test Engineer :	Zhi Lu

Low Band Edge Plot on 2.4GHz 802.11n HT40 Channel 01


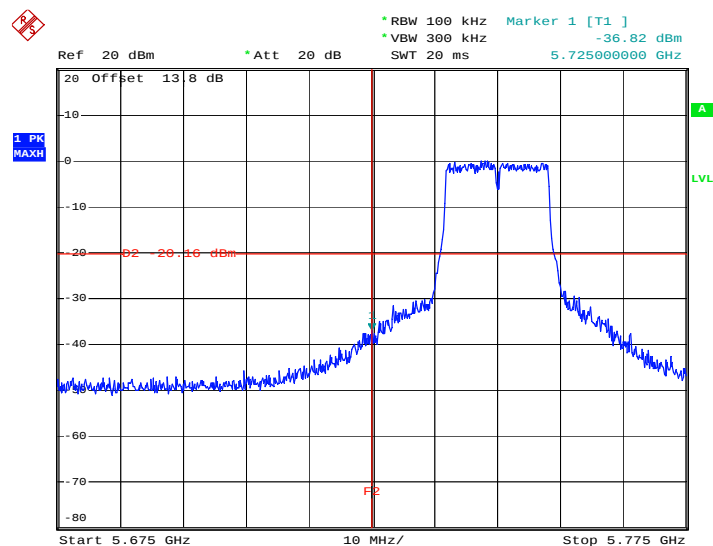
Date: 22. JAN. 2013 23:38:43

High Band Edge Plot on 2.4GHz 802.11n HT40 Channel 11


Date: 22. JAN. 2013 23:44:44

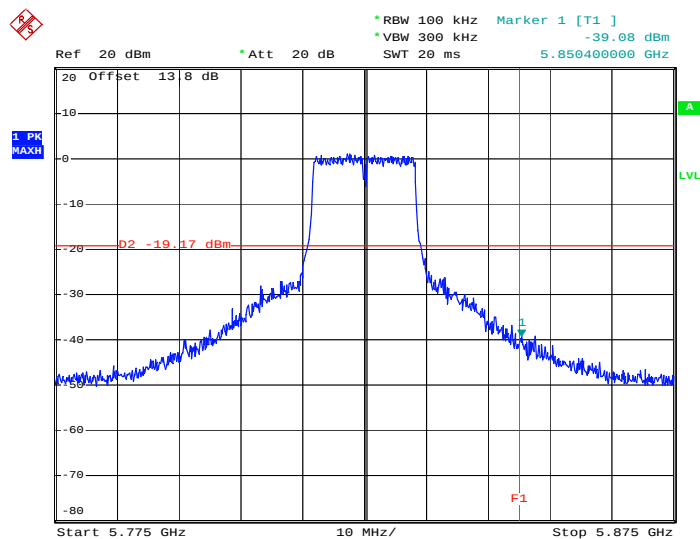
Test Mode :	802.11a	Temperature :	20~21℃
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	149 and 165	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11a Channel 149



Date: 30.JAN.2013 02:18:20

High Band Edge Plot on 802.11a Channel 165

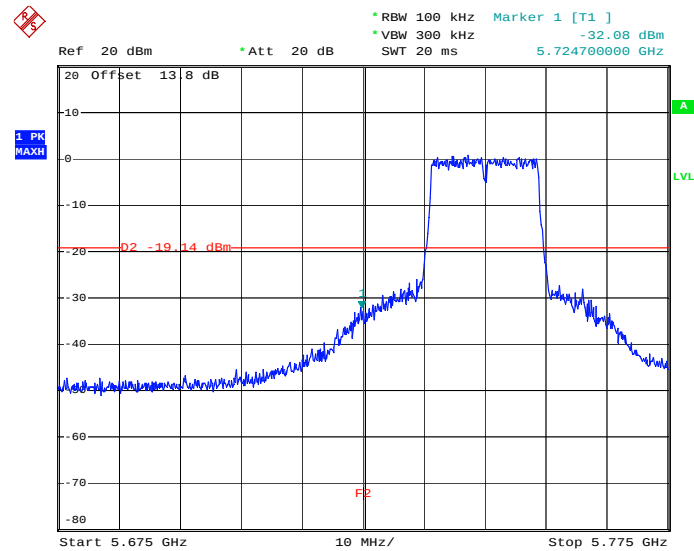


Date: 30.JAN.2013 02:09:35



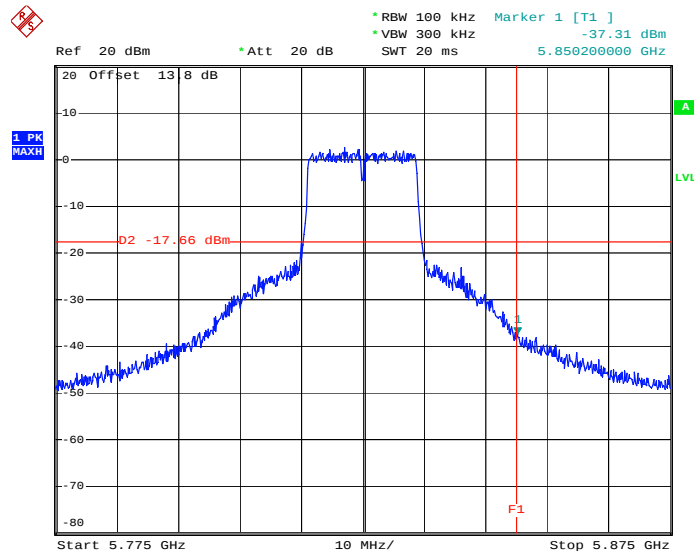
Test Mode :	802.11n HT20	Temperature :	20~21℃
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	149 and 165	Test Engineer :	Zhi Lu

Low Band Edge Plot on 5GHz 802.11n HT20 Channel 149



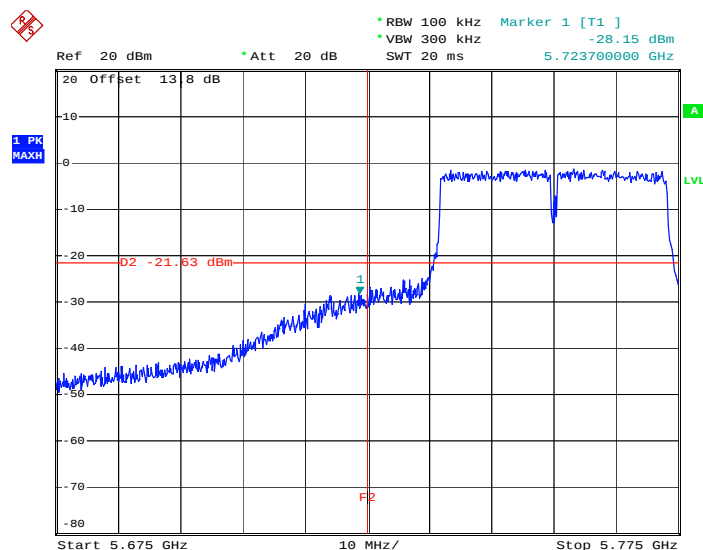
Date: 30.JAN.2013 02:22:47

High Band Edge Plot on 5GHz 802.11n HT20 Channel 165

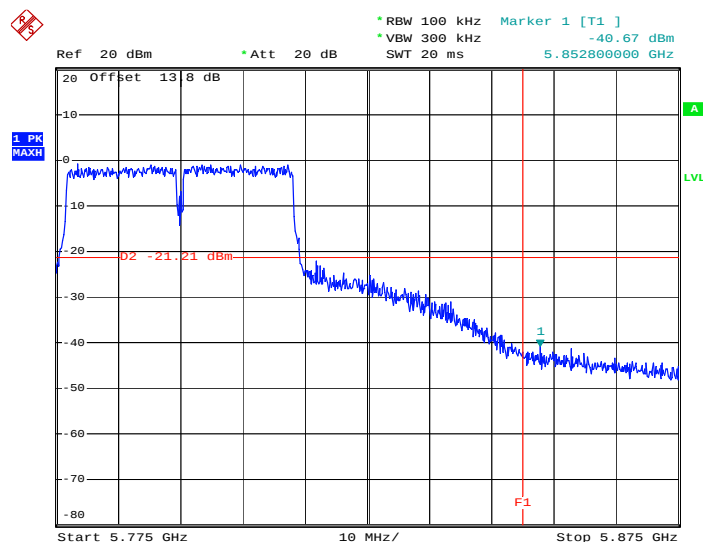


Date: 30.JAN.2013 02:32:02

Test Mode :	802.11n HT40	Temperature :	20~21°C
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	151 and 159	Test Engineer :	Zhi Lu

Low Band Edge Plot on 5GHz 802.11n HT40 Channel 151


Date: 30.JAN.2013 02:34:56

High Band Edge Plot on 5GHz 802.11n HT40 Channel 159


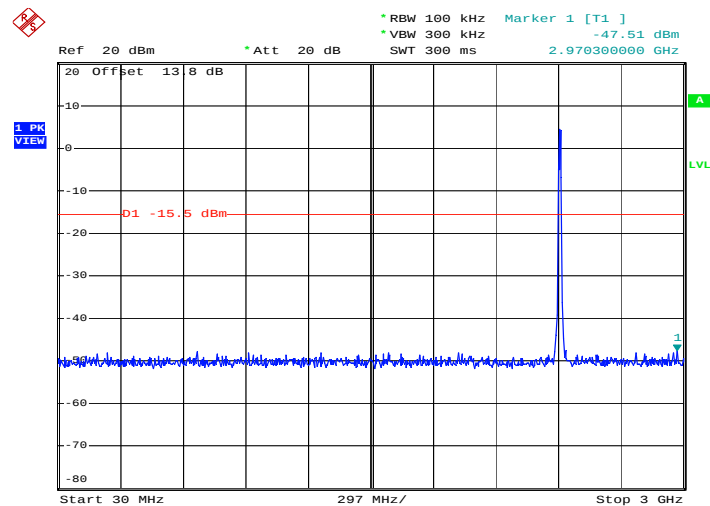
Date: 30.JAN.2013 02:37:51

3.4.6 Test Result of Conducted Spurious Emission

Test Mode :	802.11b	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	01, 06, 11	Test Engineer :	Zhi Lu

802.11b 30 MHz~3 GHz

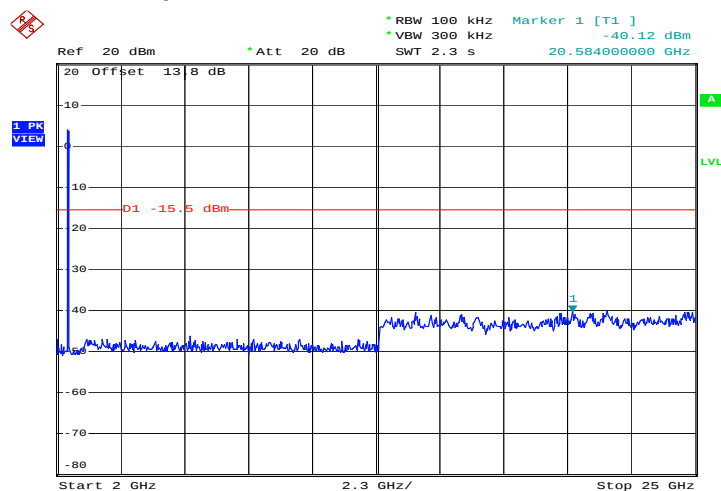
Conducted Spurious Emission Plot on Channel 01



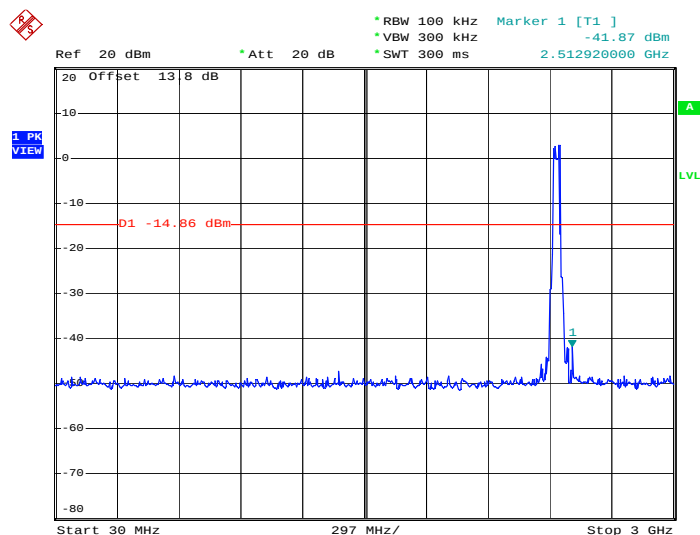
Date: 22.JAN.2013 22:43:54

802.11b 2 GHz~25 GHz

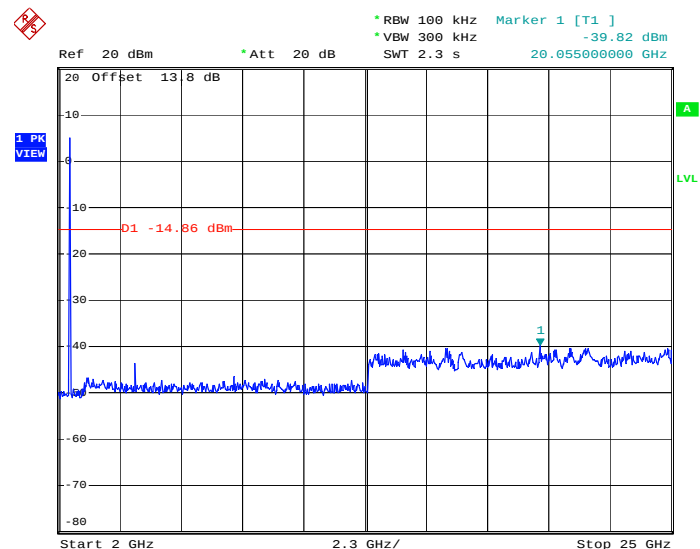
Conducted Spurious Emission Plot on Channel 01



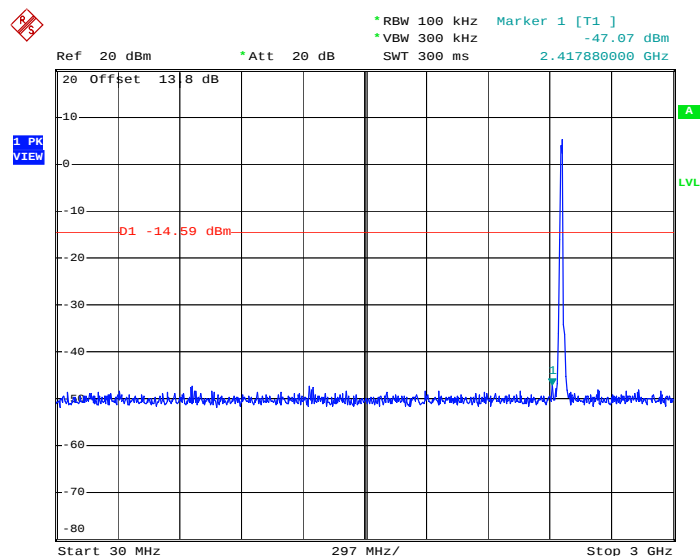
Date: 22.JAN.2013 22:44:13

802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


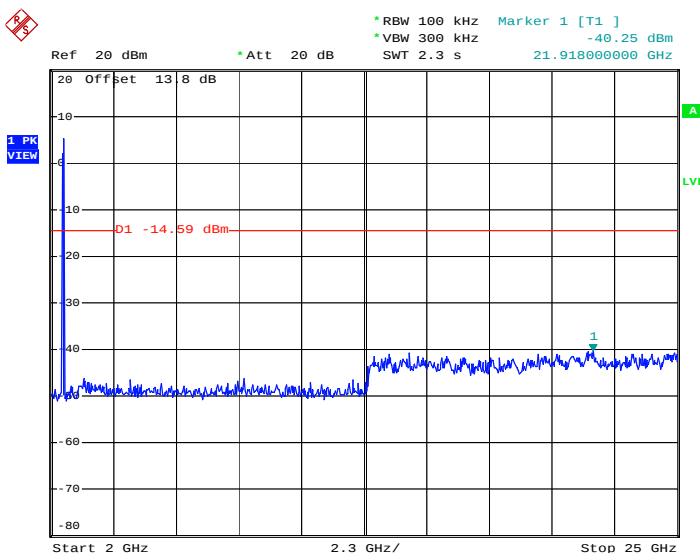
Date: 22.JAN.2013 23:51:46

802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 22.JAN.2013 22:49:54

802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 22.JAN.2013 22:53:26

802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


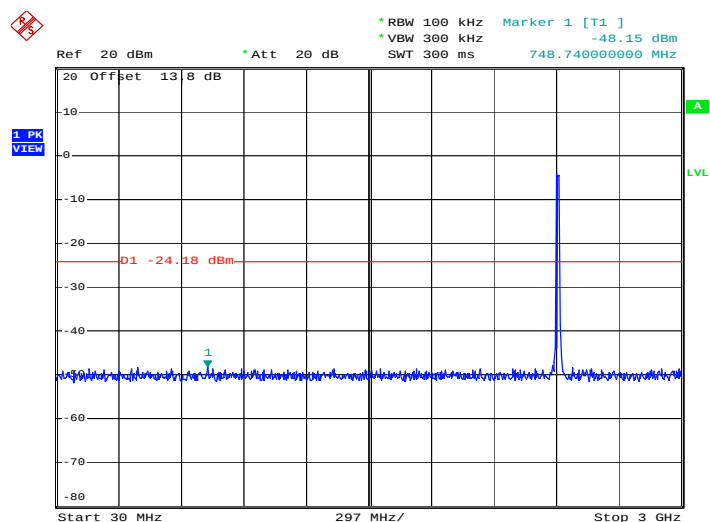
Date: 22.JAN.2013 22:53:45



Test Mode :	802.11g	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	01, 06, 11	Test Engineer :	Zhi Lu

802.11g 30 MHz~3 GHz

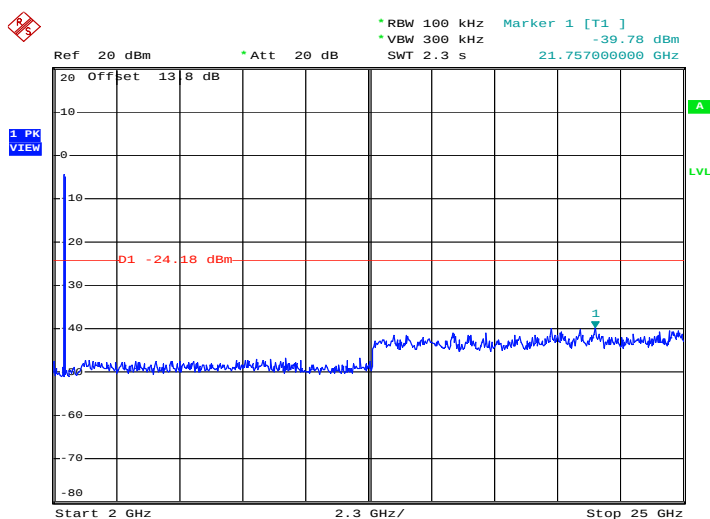
Conducted Spurious Emission Plot on Channel 01



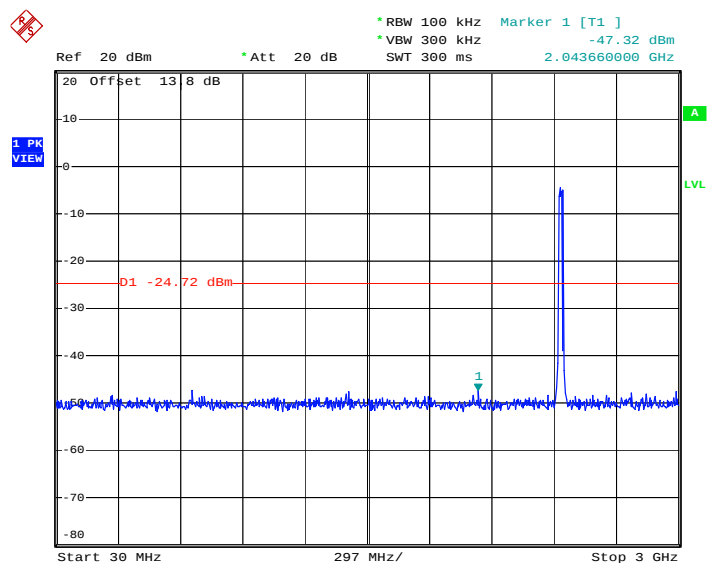
Date: 22.JAN.2013 22:58:23

802.11g 2 GHz~25 GHz

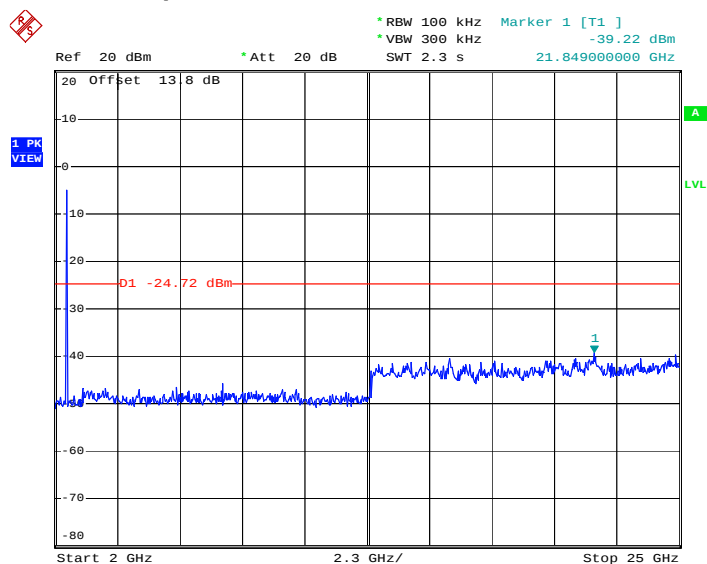
Conducted Spurious Emission Plot on Channel 01



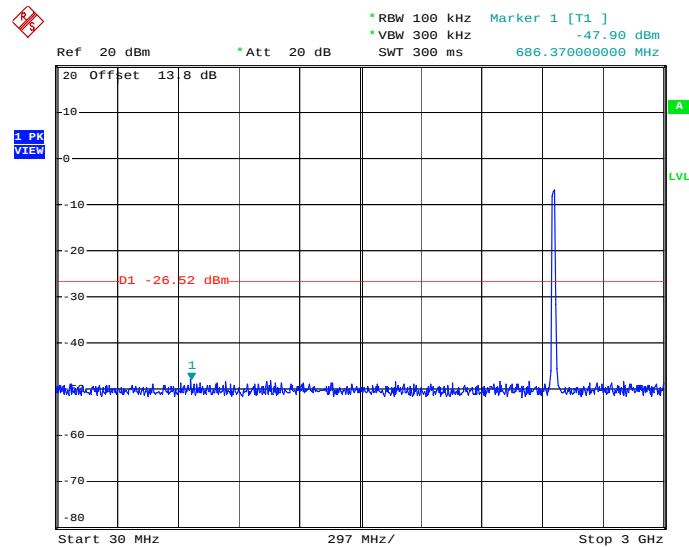
Date: 22.JAN.2013 22:58:42

802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


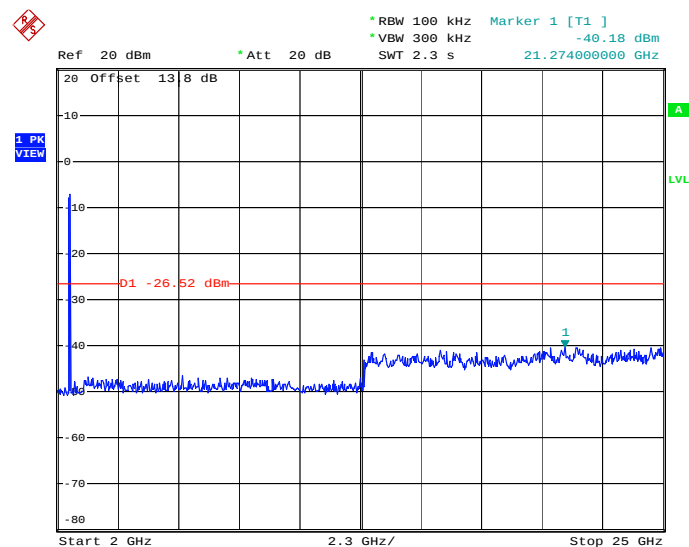
Date: 22.JAN.2013 23:01:07

802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 22.JAN.2013 23:01:25

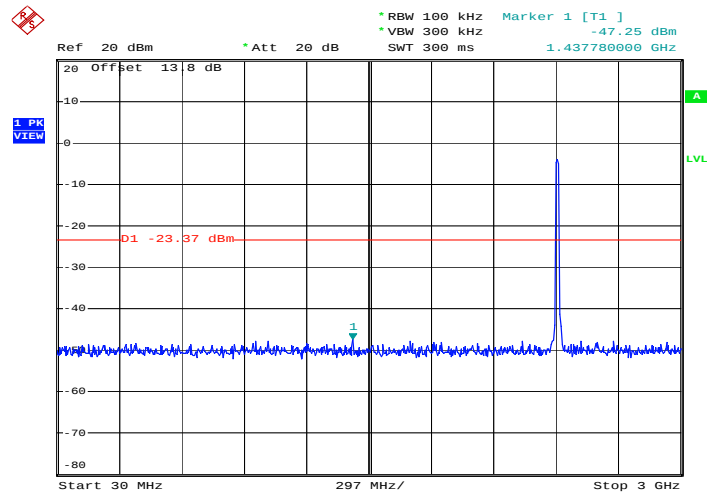
802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 22.JAN.2013 23:08:13

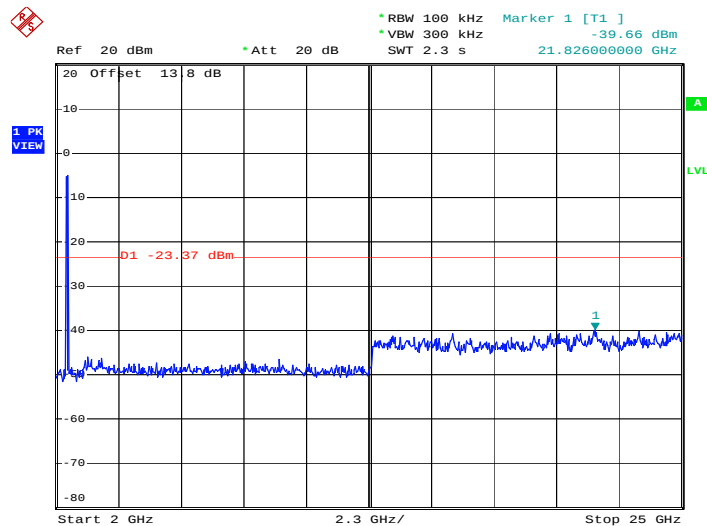
802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 22.JAN.2013 23:08:32

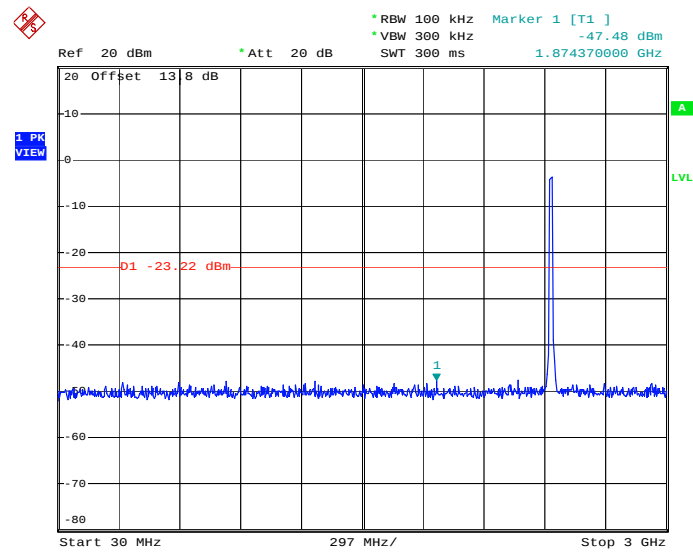
Test Mode :	802.11n HT20	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	01, 06, 11	Test Engineer :	Zhi Lu

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


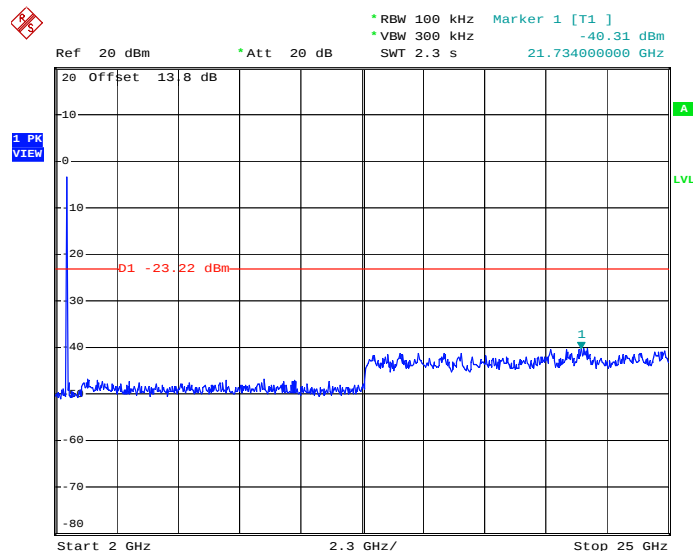
Date: 22.JAN.2013 23:18:45

2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 01


Date: 22.JAN.2013 23:19:03

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 22.JAN.2013 23:22:22

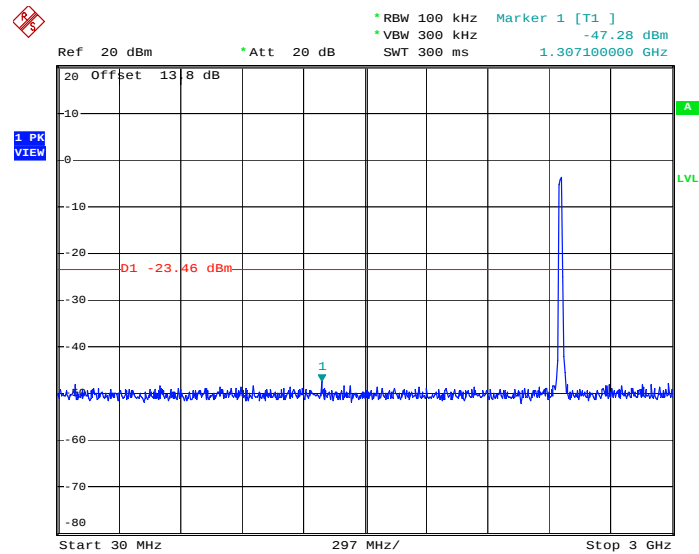
2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 22.JAN.2013 23:22:41



2.4GHz 802.11n HT20 30 MHz~3 GHz

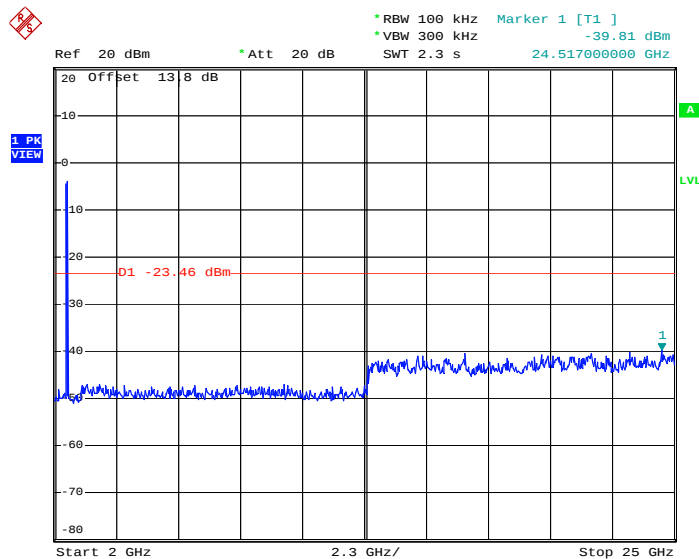
Conducted Spurious Emission Plot on Channel 11



Date: 22.JAN.2013 23:25:06

2.4GHz 802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



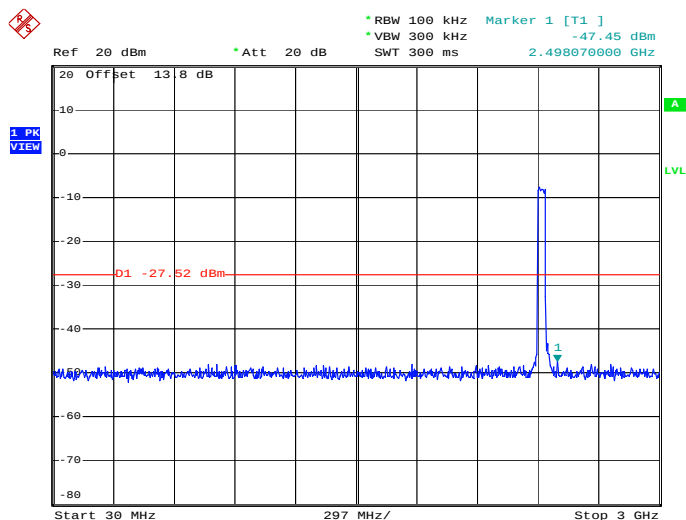
Date: 22.JAN.2013 23:25:24



Test Mode :	802.11n HT40	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	03, 06, 09	Test Engineer :	Zhi Lu

2.4GHz 802.11n HT40 30 MHz~3 GHz

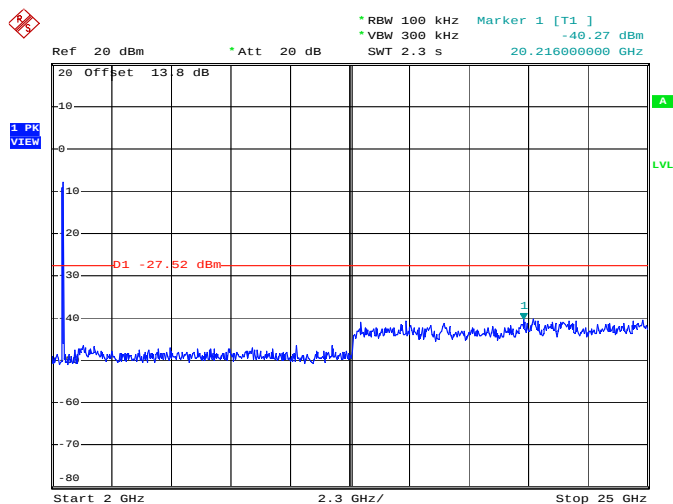
Conducted Spurious Emission Plot on Channel 03



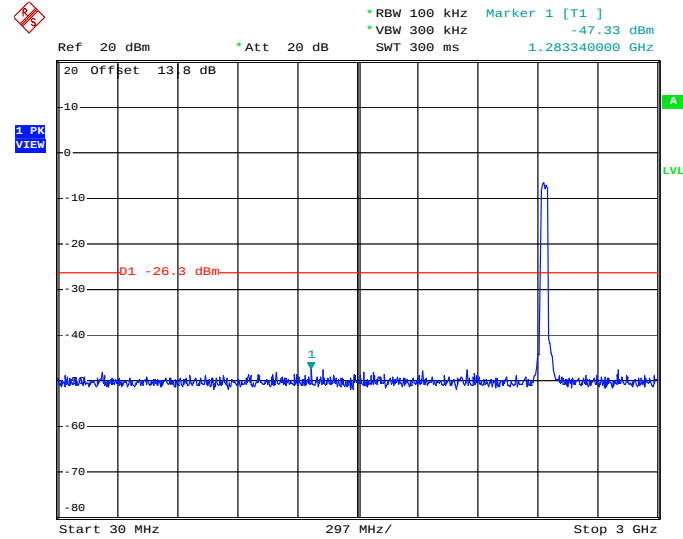
Date: 22.JAN.2013 23:39:01

2.4GHz 802.11n HT40 2 GHz~25 GHz

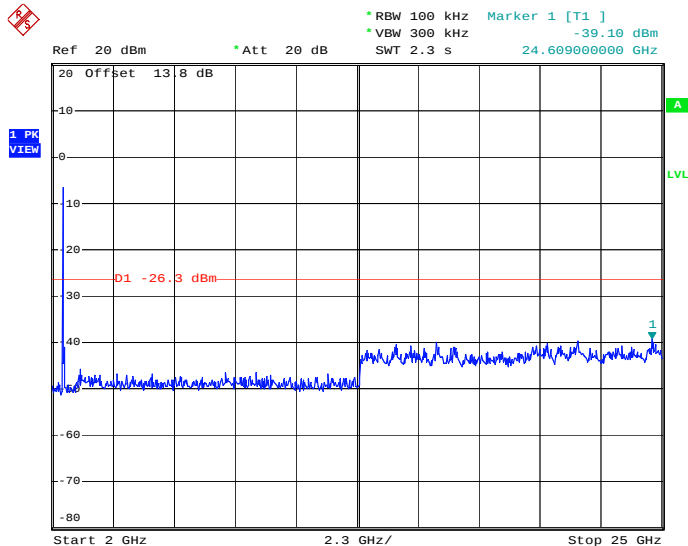
Conducted Spurious Emission Plot on Channel 03



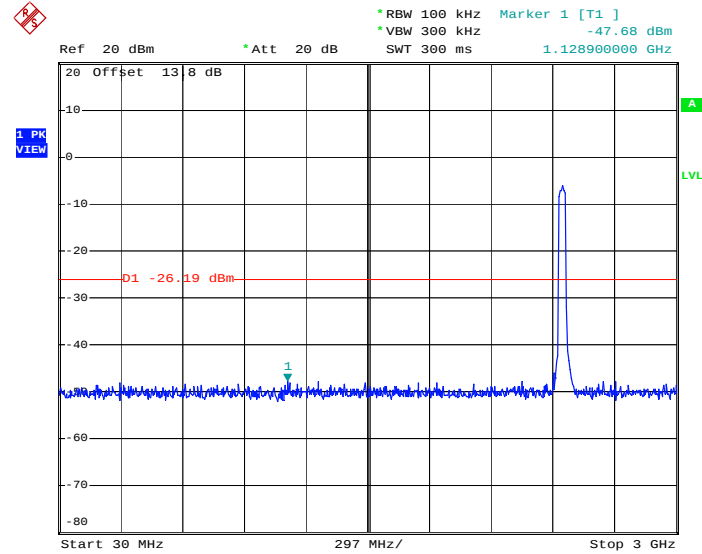
Date: 22.JAN.2013 23:39:20

2.4GHz 802.11n HT40 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


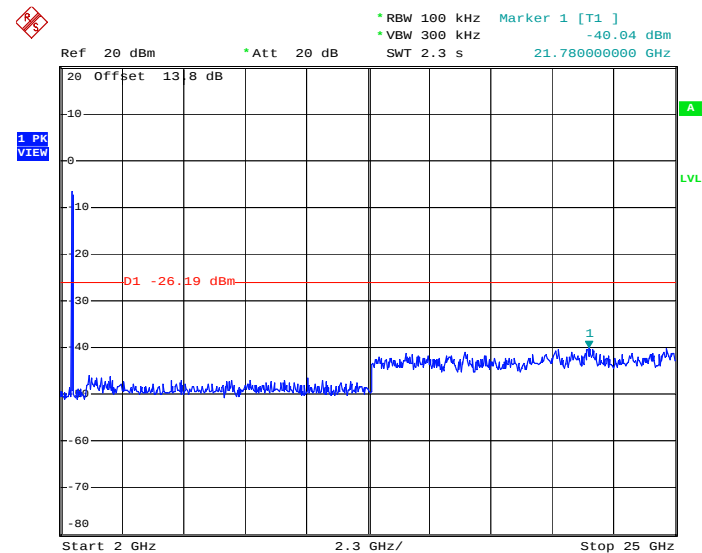
Date: 22.JAN.2013 23:41:31

2.4GHz 802.11n HT40 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 22.JAN.2013 23:41:49

2.4GHz 802.11n HT40 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 09


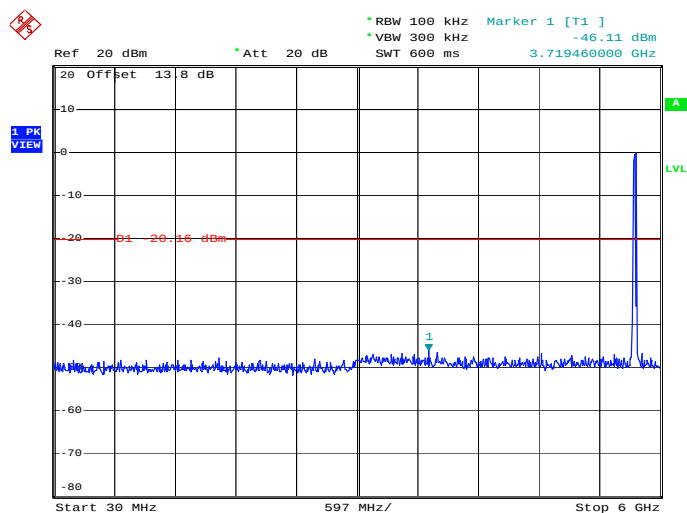
Date: 22.JAN.2013 23:45:02

2.4GHz 802.11n HT40 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 09


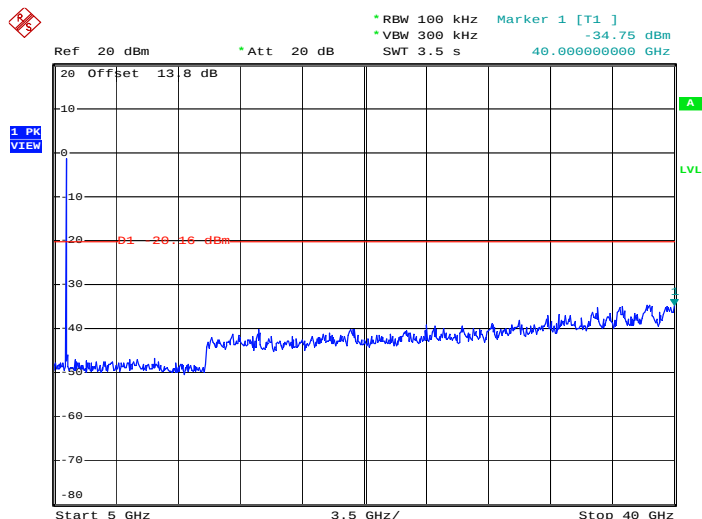
Date: 22.JAN.2013 23:45:20



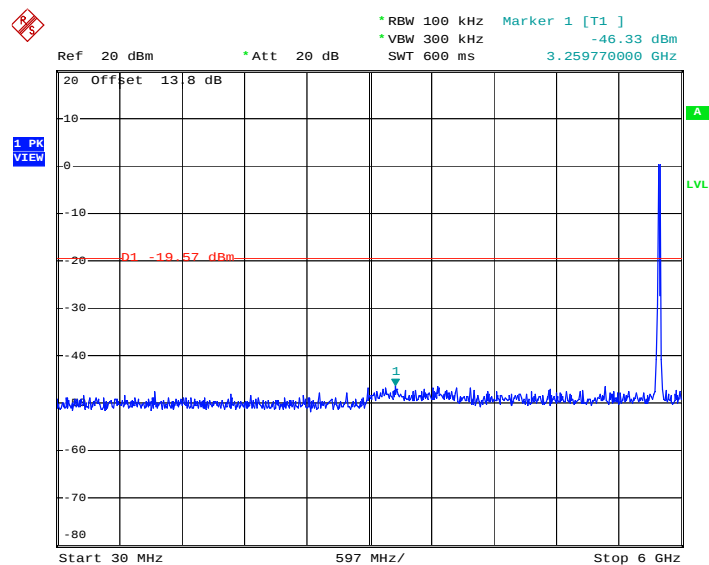
Test Mode :	802.11a	Temperature :	20~21°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	40~41%
Test Channel :	149, 157, 165	Test Engineer :	Zhi Lu

802.11a 30 MHz~6 GHz**Conducted Spurious Emission Plot on Channel 149**

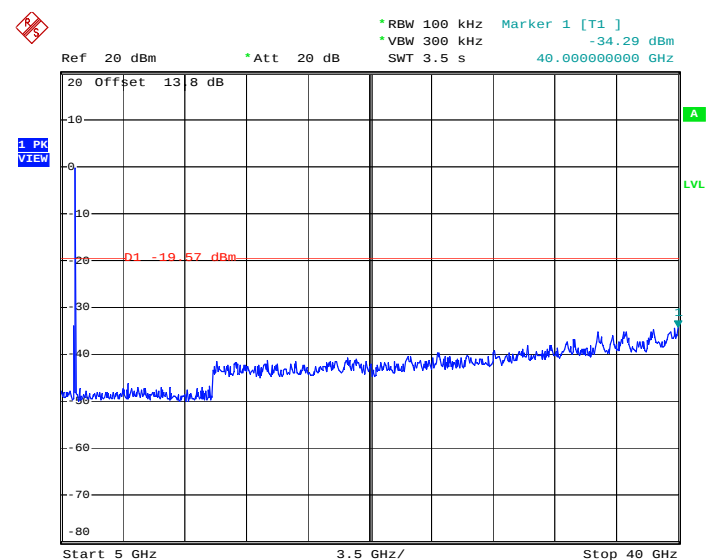
Date: 30.JAN.2013 02:18:38

802.11a 5 GHz~40 GHz**Conducted Spurious Emission Plot on Channel 149**

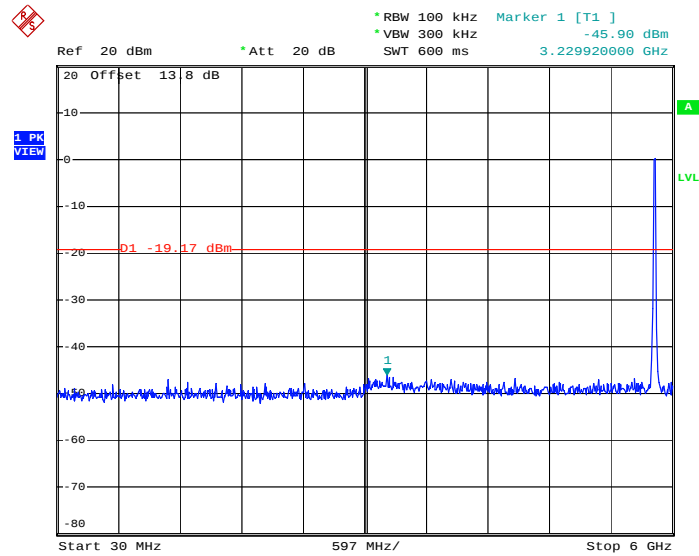
Date: 30.JAN.2013 02:18:56

802.11a 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 157


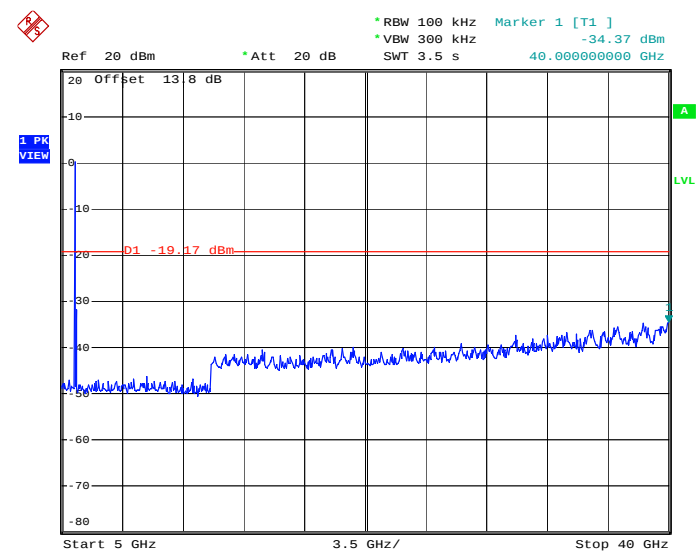
Date: 30.JAN.2013 02:06:26

802.11a 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 157


Date: 30.JAN.2013 02:06:44

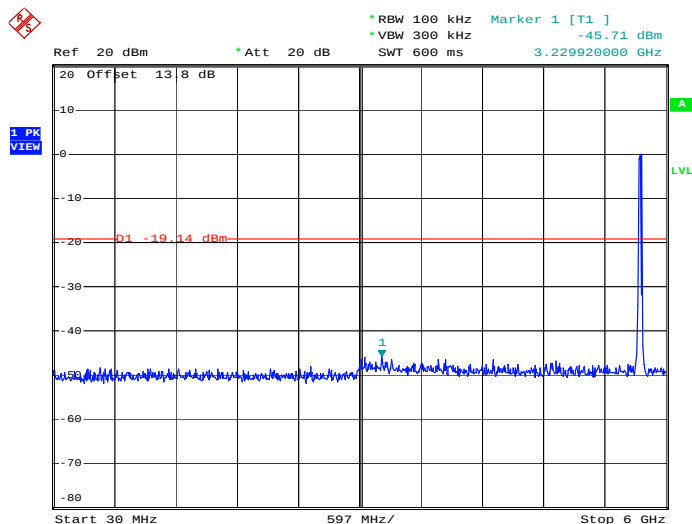
802.11a 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 165


Date: 30.JAN.2013 02:09:53

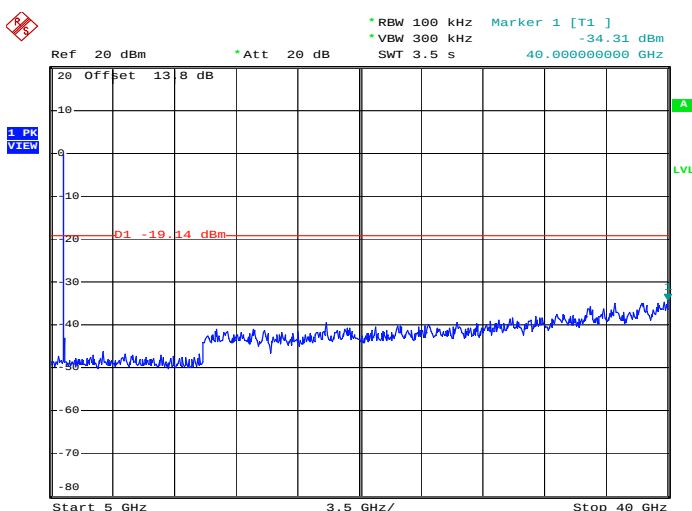
802.11a 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 165


Date: 30.JAN.2013 02:10:12

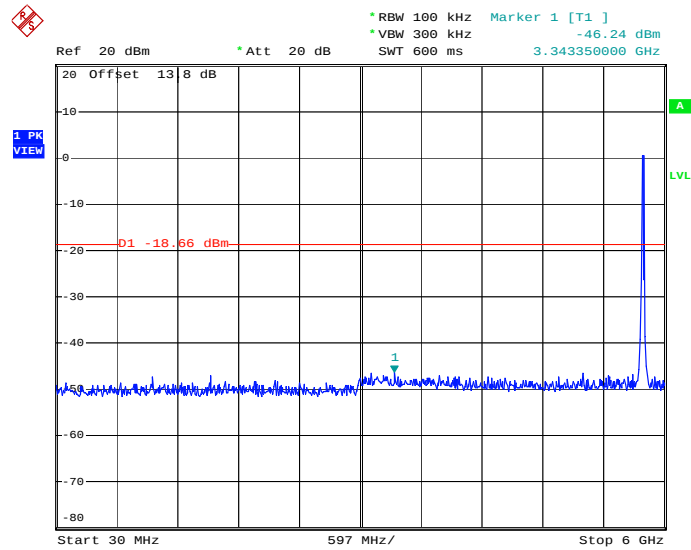
Test Mode :	802.11n HT20	Temperature :	20~21°C
Test Band :	30MHz-5GHz and 5G-40GHz	Relative Humidity :	40~41%
Test Channel :	149, 157, 165	Test Engineer :	Zhi Lu

5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 149


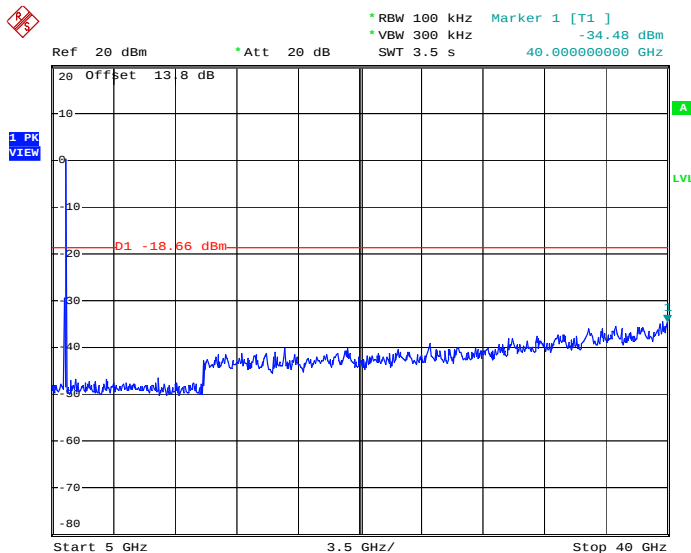
Date: 30.JAN.2013 02:23:06

5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 149


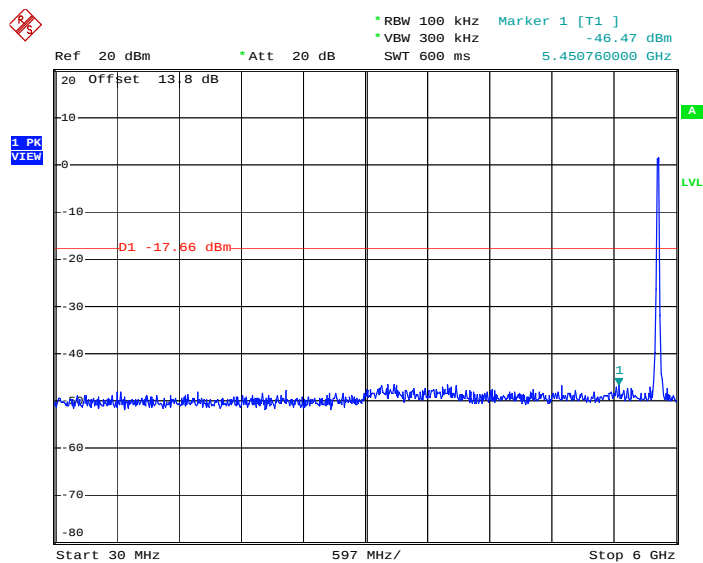
Date: 30.JAN.2013 02:23:24

5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 157


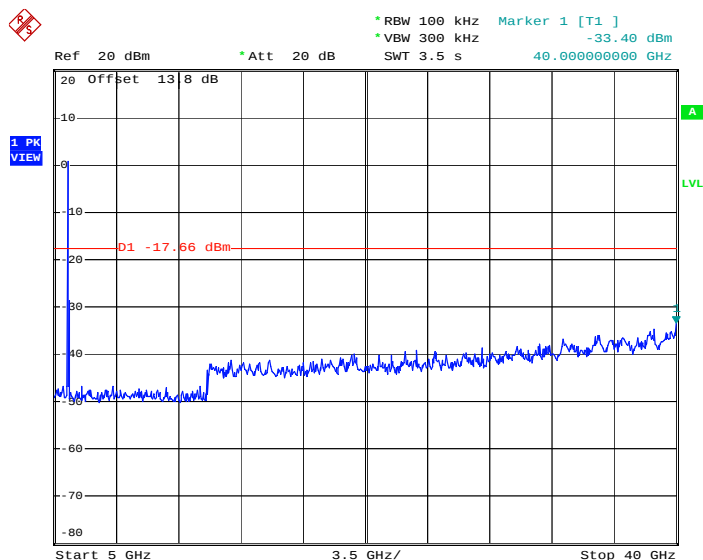
Date: 30.JAN.2013 02:27:04

5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 157


Date: 30.JAN.2013 02:27:23

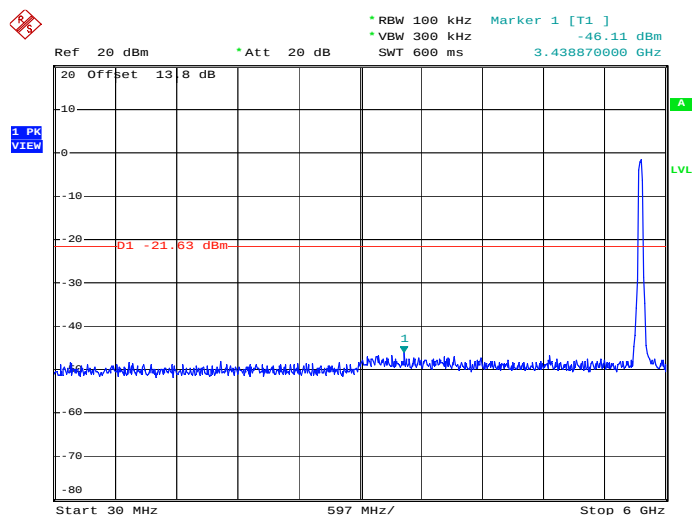
5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 165


Date: 30.JAN.2013 02:32:21

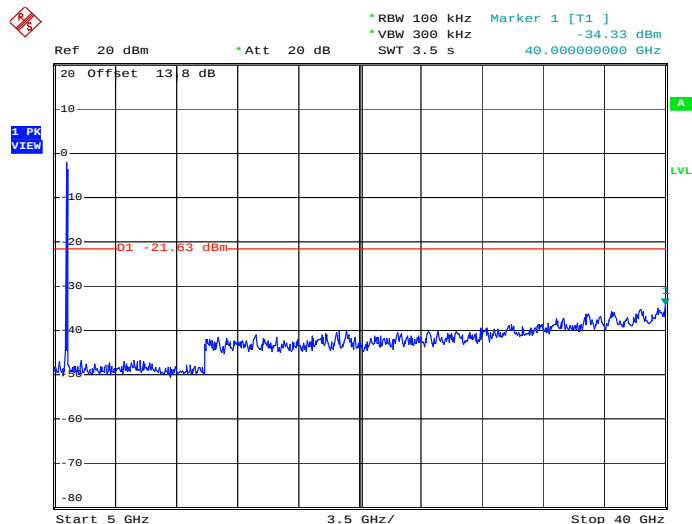
5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 165


Date: 30.JAN.2013 02:32:39

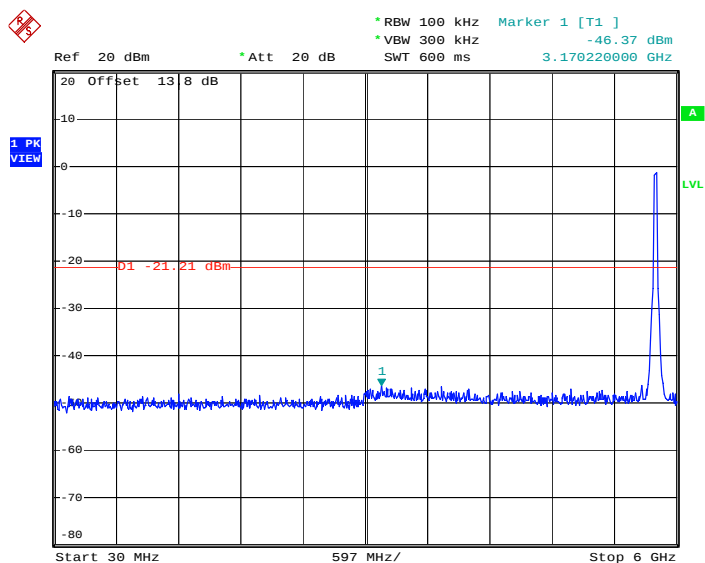
Test Mode :	802.11n HT40	Temperature :	20~21°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	40~41%
Test Channel :	151 and 159	Test Engineer :	Zhi Lu

5GHz 802.11n HT40 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 151


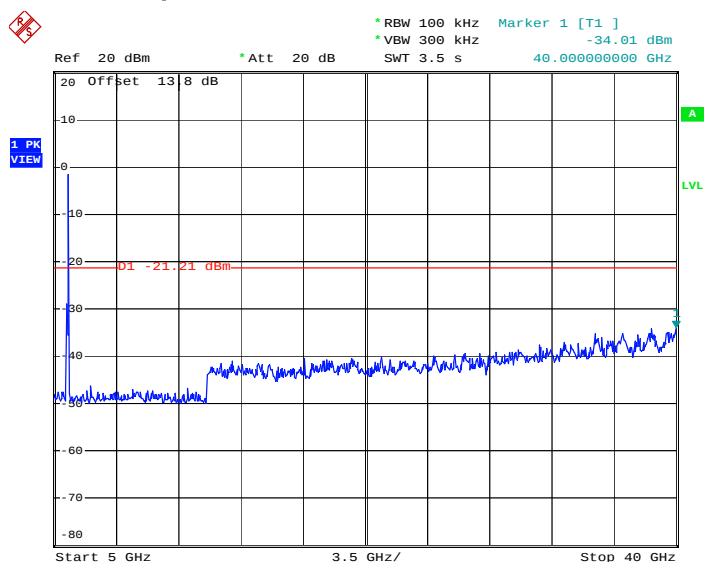
Date: 30.JAN.2013 02:35:15

5GHz 802.11n HT40 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 151


Date: 30.JAN.2013 02:35:33

5GHz 802.11n HT40 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 159


Date: 30.JAN.2013 02:38:10

5GHz 802.11n HT40 5GHz~40 GHz
Conducted Spurious Emission Plot on Channel 159


Date: 30.JAN.2013 02:38:28

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 KHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

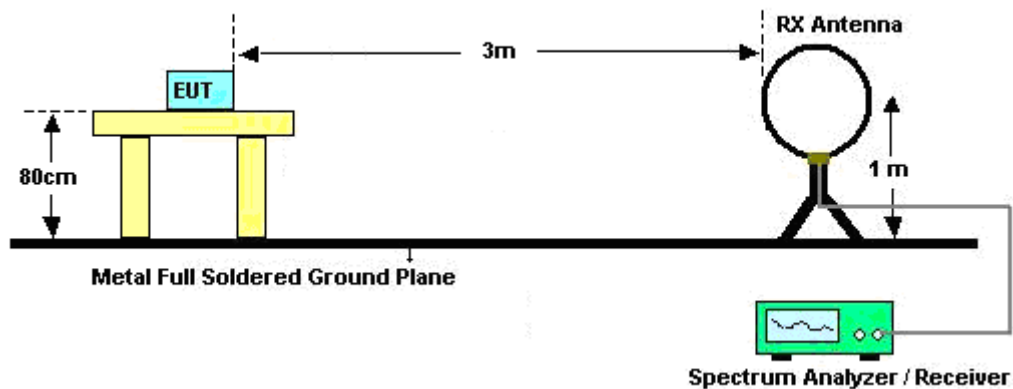
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	100.00	-	-	10Hz
2.4GHz 802.11n HT20	100.00	-	-	10Hz
2.4GHz 802.11n HT40	100.00	-	-	10Hz
802.11a	100.00	-	-	10Hz
5GHz 802.11n HT20	100.00	-	-	10Hz
5GHz 802.11n HT40	100.00	-	-	10Hz

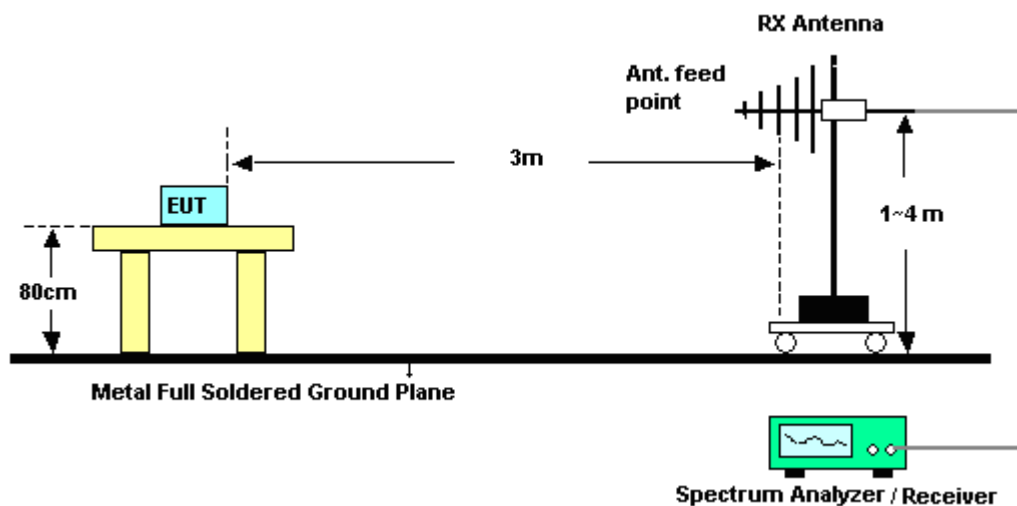
Note: For average measurement with duty cycle $< 98\%$, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

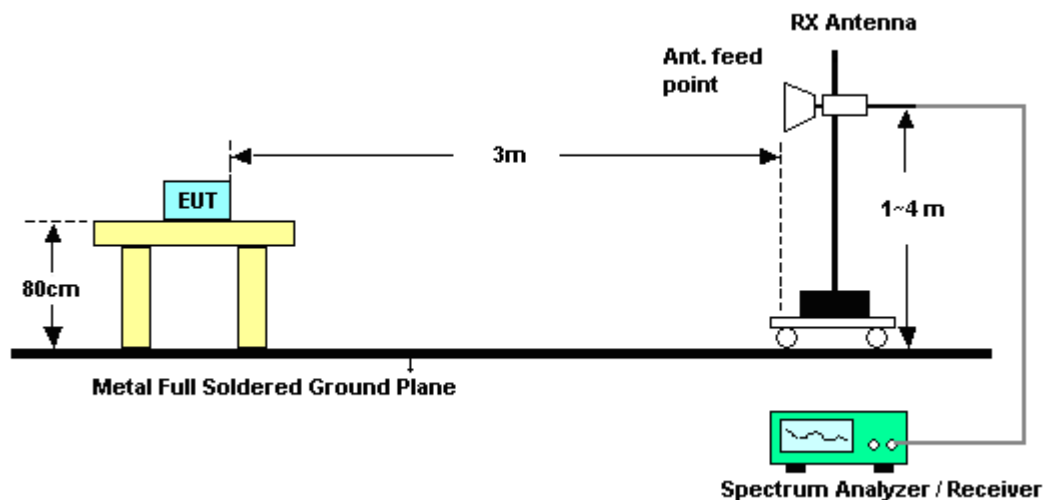
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Emissions (9KHz ~ 30MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Band Edges

Test Mode :	802.11b	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.59	51.4	-22.6	74	47.94	32.86	2.11	31.51	115	296	Peak
2386.86	40.93	-13.07	54	37.47	32.86	2.11	31.51	115	296	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.42	53.56	-20.44	74	50.15	32.83	2.09	31.51	100	17	Peak
2386.77	42.38	-11.62	54	38.92	32.86	2.11	31.51	100	17	Average

Test Mode :	802.11b	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.64	54.13	-19.87	74	50.42	33.05	2.17	31.51	162	29	Peak
2487.07	44.21	-9.79	54	40.55	33.01	2.16	31.51	162	29	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.73	56.87	-17.13	74	53.16	33.05	2.17	31.51	170	68	Peak
2487.19	48.45	-5.55	54	44.79	33.01	2.16	31.51	170	68	Average



Test Mode :	802.11g	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	53.79	-20.21	74	50.33	32.86	2.11	31.51	148	292	Peak
2390	38.93	-15.07	54	35.47	32.86	2.11	31.51	148	292	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	58.81	-15.19	74	55.35	32.86	2.11	31.51	100	42	Peak
2390	43.58	-10.42	54	40.12	32.86	2.11	31.51	100	42	Average

Test Mode :	802.11g	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.67	57.46	-16.54	74	53.8	33.01	2.16	31.51	100	316	Peak
2483.5	40.74	-13.26	54	37.08	33.01	2.16	31.51	100	316	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.49	62.43	-11.57	74	58.77	33.01	2.16	31.51	100	334	Peak
2483.5	45.38	-8.62	54	41.72	33.01	2.16	31.51	100	334	Average



Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	56.31	-17.69	74	52.85	32.86	2.11	31.51	100	315	Peak
2390	40.79	-13.21	54	37.33	32.86	2.11	31.51	100	315	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	63.02	-10.98	74	59.56	32.86	2.11	31.51	100	39	Peak
2390	46.25	-7.75	54	42.79	32.86	2.11	31.51	100	39	Average

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.8	60.24	-13.76	74	56.58	33.01	2.16	31.51	100	316	Peak
2483.5	43.25	-10.75	54	39.59	33.01	2.16	31.51	100	316	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.53	65.45	-8.55	74	61.79	33.01	2.16	31.51	100	40	Peak
2483.5	48.23	-5.77	54	44.57	33.01	2.16	31.51	100	40	Average

Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	03 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.58	57.75	-16.25	74	54.29	32.86	2.11	31.51	100	239	Peak
2389.02	43.4	-10.6	54	39.94	32.86	2.11	31.51	100	239	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.76	57.86	-16.14	74	54.4	32.86	2.11	31.51	100	128	Peak
2390	43.72	-10.28	54	40.26	32.86	2.11	31.51	100	128	Average

Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	09 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.58	62.94	-11.06	74	59.28	33.01	2.16	31.51	115	306	Peak
2483.5	48.64	-5.36	54	44.98	33.01	2.16	31.51	115	306	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.73	63.63	-10.37	74	59.97	33.01	2.16	31.51	100	163	Peak
2483.5	49.56	-4.44	54	45.9	33.01	2.16	31.51	100	163	Average



Test Mode :	802.11a	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	149 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.8	68.07	-17.88	85.95	60.18	35.52	3.22	30.85	100	244	Peak
5745	105.95	-	-	98.06	35.52	3.21	30.84	100	244	Peak
5745	96.05	-	-	88.16	35.52	3.21	30.84	100	244	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.85	70	-18.45	88.45	62.11	35.52	3.22	30.85	112	0	Peak
5745	108.45	-	-	100.56	35.52	3.21	30.84	112	0	Peak
5745	98.75	-	-	90.86	35.52	3.21	30.84	112	0	Average

Remark: 5724.8 MHz and 5724.85 MHz are not within restricted bands, and its limit lines are 20dB below the highest emission level. For example, 105.95 dBμV/m - 20dB = 85.95 dBμV/m.

Test Mode :	802.11a	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	165 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	107.59	-	-	99.65	35.55	3.17	30.78	100	0	Peak
5825	96.79	-	-	88.85	35.55	3.17	30.78	100	0	Average
5850	63.85	-23.74	87.59	55.9	35.56	3.16	30.77	100	0	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	110.12	-	-	102.18	35.55	3.17	30.78	100	356	Peak
5825	99.61	-	-	91.67	35.55	3.17	30.78	100	356	Average
5850	68.99	-21.13	90.12	61.04	35.56	3.16	30.77	100	356	Peak

Remark: 5850 MHz is not within restricted band, and its limit line is 20dB below the highest emission level.

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	149 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.9	75.08	-11.46	86.54	67.19	35.52	3.22	30.85	100	231	Peak
5745	106.54	-	-	98.65	35.52	3.21	30.84	100	244	Peak
5745	95.19	-	-	87.3	35.52	3.21	30.84	100	244	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	77.72	-13.02	90.74	69.83	35.52	3.22	30.85	100	7	Peak
5745	110.74	-	-	102.85	35.52	3.21	30.84	100	356	Peak
5745	99.45	-	-	91.56	35.52	3.21	30.84	100	356	Average

Remark: 5724.9 MHz and 5725 MHz are not within restricted bands, and its limits line are 20dB below the highest emission level.

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	165 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	107.22	-	-	99.28	35.55	3.17	30.78	100	116	Peak
5825	97.55	-	-	89.61	35.55	3.17	30.78	100	116	Average
5850	67.96	-19.26	87.22	60.01	35.56	3.16	30.77	100	116	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	110.83	-	-	102.89	35.55	3.17	30.78	100	216	Peak
5825	99.59	-	-	91.65	35.55	3.17	30.78	100	216	Average
5850	73.47	-17.36	90.83	65.52	35.56	3.16	30.77	100	216	Peak

Remark: 5850 MHz is not within restricted band, and its limit line is 20dB below the highest emission level.



Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	151 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5723.75	78.94	-6.88	85.82	71.05	35.52	3.22	30.85	106	240	Peak
5755	105.82	-	-	97.92	35.53	3.2	30.83	106	240	Peak
5755	95.02	-	-	87.12	35.53	3.2	30.83	106	240	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5723.9	80.02	-7.22	87.24	72.13	35.52	3.22	30.85	100	59	Peak
5755	107.24	-	-	99.34	35.53	3.2	30.83	100	59	Peak
5755	96.01	-	-	88.11	35.53	3.2	30.83	100	59	Average

Remark: 5723.75 MHz and 5723.9 MHz are not within a restricted bands, and its limit lines are 20dB below the highest emission level.

Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	159 (in Laptop Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5795	106.31	-	-	98.39	35.54	3.18	30.8	103	239	Peak
5795	95.83	-	-	87.91	35.54	3.18	30.8	103	239	Average
5850	65.2	-21.11	86.31	57.25	35.56	3.16	30.77	103	239	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5795	109.24	-	-	101.32	35.54	3.18	30.8	120	356	Peak
5795	97.99	-	-	90.07	35.54	3.18	30.8	120	356	Average
5850	67.07	-22.17	89.24	59.12	35.56	3.16	30.77	120	356	Peak

Remark: 5850 MHz is not within restricted band, and its limit line is 20dB below the highest emission level.

Test Mode :	802.11b	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.7	57.73	-16.27	74	54.02	33.05	2.17	31.51	200	162	Peak
2487.19	49.05	-4.95	54	45.39	33.01	2.16	31.51	200	175	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.97	56.19	-17.81	74	52.48	33.05	2.17	31.51	100	236	Peak
2487.13	47.59	-6.41	54	43.93	33.01	2.16	31.51	100	198	Average

Test Mode :	802.11g	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.49	60.17	-13.83	74	56.51	33.01	2.16	31.51	200	312	Peak
2483.5	44.66	-9.34	54	41	33.01	2.16	31.51	200	156	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.67	63.32	-10.68	74	59.66	33.01	2.16	31.51	120	330	Peak
2483.5	46.97	-7.03	54	43.31	33.01	2.16	31.51	120	355	Average

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.58	60.12	-13.88	74	56.46	33.01	2.16	31.51	158	88	Peak
2483.5	44.41	-9.59	54	40.75	33.01	2.16	31.51	158	88	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.59	62.86	-11.14	74	59.2	33.01	2.16	31.51	115	186	Peak
2483.5	46.74	-7.26	54	43.08	33.01	2.16	31.51	115	186	Average

Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	09 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.94	58.77	-15.23	74	55.11	33.01	2.16	31.51	200	90	Peak
2483.5	44.56	-9.44	54	40.9	33.01	2.16	31.51	200	90	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.7	60.95	-13.05	74	57.29	33.01	2.16	31.51	100	180	Peak
2483.5	46.86	-7.14	54	43.2	33.01	2.16	31.51	100	180	Average



Test Mode :	802.11a	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	149 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.75	60.17	-19.1	79.27	52.28	35.52	3.22	30.85	100	306	Peak
5745	99.27	-	-	91.38	35.52	3.21	30.84	123	322	Peak
5745	88.64	-	-	80.75	35.52	3.21	30.84	123	322	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.75	68.99	-18.39	87.38	61.1	35.52	3.22	30.85	100	3	Peak
5745	107.38	-	-	99.49	35.52	3.21	30.84	100	3	Peak
5745	96.82	-	-	88.93	35.52	3.21	30.84	100	3	Average

Remark: 5724.75 MHz is not within restricted band, and its limit line is 20dB below the highest emission level.

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	149 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.75	69.98	-10.45	80.43	62.09	35.52	3.22	30.85	100	322	Peak
5745	100.43	-	-	92.54	35.52	3.21	30.84	100	314	Peak
5745	89.42	-	-	81.53	35.52	3.21	30.84	100	314	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5723.75	78.38	-10.47	88.85	70.49	35.52	3.22	30.85	110	235	Peak
5745	108.85	-	-	100.96	35.52	3.21	30.84	100	336	Peak
5745	97.61	-	-	89.72	35.52	3.21	30.84	100	336	Average

Remark: 5724.75 MHz and 5723.75 MHz are not within restricted bands, and its limit lines are 20dB below the highest emission level.



Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	151 (in Tablet Mode with Adapter 1 for Sample 1)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5723.75	69.57	-8.62	78.19	61.68	35.52	3.22	30.85	126	214	Peak
5755	98.19	-	-	90.29	35.53	3.2	30.83	100	322	Peak
5755	86.85	-	-	78.95	35.53	3.2	30.83	100	322	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5723.85	79.06	-9.03	88.09	71.17	35.52	3.22	30.85	155	2	Peak
5755	108.09	-	-	100.19	35.53	3.2	30.83	106	21	Peak
5755	96.86	-	-	88.96	35.53	3.2	30.83	106	21	Average

Remark: 5723.75 MHz and 5723.85 MHz are not within restricted bands, and its limit lines are 20dB below the highest emission level.

Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	09 (in Laptop Mode with Adapter 2 for Sample 2)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.58	52.91	-21.09	74	49.25	33.01	2.16	31.51	175	307	Peak
2483.5	38.13	-15.87	54	34.47	33.01	2.16	31.51	175	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.07	56.44	-17.56	74	52.78	33.01	2.16	31.51	123	19	Peak
2483.5	40.5	-13.5	54	36.84	33.01	2.16	31.51	123	19	Average



Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	09 (in Laptop Mode with Adapter 3 for Sample 3)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2485.18	54.43	-19.57	74	50.77	33.01	2.16	31.51	139	138	Peak
2483.5	40.73	-13.27	54	37.07	33.01	2.16	31.51	139	138	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2485.12	57.52	-16.48	74	53.86	33.01	2.16	31.51	100	238	Peak
2483.5	43.07	-10.93	54	39.41	33.01	2.16	31.51	100	238	Average

Test Mode :	802.11n HT40	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	09 (in Laptop Mode with Adapter 4 for Sample 4)	Test Engineer :	Allen Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.7	58.24	-15.76	74	54.58	33.01	2.16	31.51	115	226	Peak
2483.5	43.29	-10.71	54	39.63	33.01	2.16	31.51	115	226	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.95	57.75	-16.25	74	54.09	33.01	2.16	31.51	120	71	Peak
2483.5	42.33	-11.67	54	38.67	33.01	2.16	31.51	120	71	Average

3.5.7 Test Result of Radiated Emission (30MHz ~ 10th Harmonic)

NOTE: Below 1GHz for radiated emission measurement, pre-scanned all test modes and only choose the worst case mode was recorded in the report.

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2397.03 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. For example, 102.21 dBuV/m - 20dB = 82.21 dBuV/m. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.03	60.58	-21.63	82.21	57.12	32.86	2.11	31.51	115	296	Peak
2412	102.21	-	-	98.71	32.89	2.12	31.51	100	288	Peak
2412	97.36	-	-	93.86	32.89	2.12	31.51	100	288	Average
4824	48.65	-25.35	74	41.92	35.17	3.09	31.53	121	45	Peak
7236	48.07	-34.14	82.21	39.6	36.18	3.24	30.95	135	47	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2397.03 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.03	62.36	-24.66	87.02	58.9	32.86	2.11	31.51	100	17	Peak
2412	107.02	-	-	103.52	32.89	2.12	31.51	125	44	Peak
2412	101.39	-	-	97.89	32.89	2.12	31.51	125	44	Average
4824	50.42	-23.58	74	43.69	35.17	3.09	31.53	121	187	Peak
7236	49.32	-37.7	87.02	40.85	36.18	3.24	30.95	100	237	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	104.16	-	-	100.58	32.95	2.14	31.51	200	360	Peak
2437	98.52	-	-	94.94	32.95	2.14	31.51	200	360	Average
4874	49.14	-24.86	74	42.36	35.18	3.12	31.52	124	347	Peak
7311	51.38	-22.62	74	42.91	36.2	3.21	30.94	120	15	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	109.7	-	-	106.12	32.95	2.14	31.51	100	40	Peak
2437	105.01	-	-	101.43	32.95	2.14	31.51	100	40	Average
4874	55.24	-18.76	74	48.46	35.18	3.12	31.52	114	204	Peak
4874	48.27	-5.73	54	41.49	35.18	3.12	31.52	114	204	Average
7311	50.5	-23.5	74	42.03	36.2	3.21	30.94	100	132	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	105.2	-	-	101.58	32.98	2.15	31.51	118	314	Peak
2462	100.1	-	-	96.48	32.98	2.15	31.51	118	314	Average
4924	50.83	-23.17	74	44	35.19	3.15	31.51			Peak
7386	51.78	-22.22	74	43.28	36.24	3.19	30.93	120	157	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	108.95	-	-	105.33	32.98	2.15	31.51	100	13	Peak
2462	103.86	-	-	100.24	32.98	2.15	31.51	100	13	Average
4924	56.15	-17.85	74	49.32	35.19	3.15	31.51	151	244	Peak
4924	49.48	-4.52	54	42.65	35.19	3.15	31.51	151	244	Average
7386	50.92	-23.08	74	42.42	36.24	3.19	30.93	100	231	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2397.81 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.81	62.91	-18.67	81.58	59.45	32.86	2.11	31.51	148	292	Peak
2412	101.58	-	-	98.08	32.89	2.12	31.51	120	292	Peak
2412	90.96	-	-	87.46	32.89	2.12	31.51	120	292	Average
4824	48.27	-25.73	74	41.54	35.17	3.09	31.53	125	48	Peak
7236	49.61	-31.97	81.58	41.14	36.18	3.24	30.95	167	189	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2398 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2398	68.55	-16.68	85.23	65.09	32.86	2.11	31.51	100	42	Peak
2412	105.23	-	-	101.73	32.89	2.12	31.51	100	42	Peak
2412	94.55	-	-	91.05	32.89	2.12	31.51	100	42	Average
4824	48.27	-25.73	74	41.54	35.17	3.09	31.53	124	56	Peak
7236	50.11	-35.12	85.23	41.64	36.18	3.24	30.95	123	48	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	100.08	-	-	96.5	32.95	2.14	31.51	100	265	Peak
2437	88.88	-	-	85.3	32.95	2.14	31.51	100	265	Average
4874	47.87	-26.13	74	41.09	35.18	3.12	31.52	120	157	Peak
7311	48.77	-25.23	74	40.3	36.2	3.21	30.94	120	157	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	105.18	-	-	101.6	32.95	2.14	31.51	100	37	Peak
2437	94.33	-	-	90.75	32.95	2.14	31.51	100	37	Average
4874	48.08	-25.92	74	41.3	35.18	3.12	31.52	122	45	Peak
7311	49.5	-24.5	74	41.03	36.2	3.21	30.94	200	345	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	100.89	-	-	97.27	32.98	2.15	31.51	100	313	Peak
2462	90.04	-	-	86.42	32.98	2.15	31.51	100	313	Average
4924	48.36	-25.64	74	41.53	35.19	3.15	31.51	122	355	Peak
7386	48.96	-25.04	74	40.46	36.24	3.19	30.93	120	154	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	105.1	-	-	101.48	32.98	2.15	31.51	119	39	Peak
2462	94.05	-	-	90.43	32.98	2.15	31.51	119	39	Average
4924	48.62	-25.38	74	41.79	35.19	3.15	31.51	124	56	Peak
7386	49.13	-24.87	74	40.63	36.24	3.19	30.93	100	0	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2398.83 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2398.83	60.99	-21.49	82.48	57.53	32.86	2.11	31.51	100	315	Peak
2412	102.48	-	-	98.98	32.89	2.12	31.51	100	293	Peak
2412	90.26	-	-	86.76	32.89	2.12	31.51	100	293	Average
4824	49.67	-24.33	74	42.94	35.17	3.09	31.53	101	243	Peak
7236	49.31	-33.17	82.48	40.84	36.18	3.24	30.95	100	0	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	01 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2399 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2399	66.17	-18.99	85.16	62.71	32.86	2.11	31.51	100	39	Peak
2412	105.16	-	-	101.66	32.89	2.12	31.51	172	70	Peak
2412	93.16	-	-	89.66	32.89	2.12	31.51	172	70	Average
4824	47.19	-26.81	74	40.46	35.17	3.09	31.53	120	157	Peak
7236	48.65	-36.51	85.16	40.18	36.18	3.24	30.95	100	0	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	101.1	-	-	97.52	32.95	2.14	31.51	115	389	Peak
2437	89.79	-	-	86.21	32.95	2.14	31.51	115	389	Average
4874	48.05	-25.95	74	41.27	35.18	3.12	31.52	120	157	Peak
7311	49.15	-24.85	74	40.68	36.2	3.21	30.94	121	78	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	106.07	-	-	102.49	32.95	2.14	31.51	100	42	Peak
2437	94.64	-	-	91.06	32.95	2.14	31.51	100	42	Average
4874	46.97	-27.03	74	40.19	35.18	3.12	31.52	124	157	Peak
7311	50.7	-23.3	74	42.23	36.2	3.21	30.94	120	0	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	101.48	-	-	97.86	32.98	2.15	31.51	100	316	Peak
2462	90.1	-	-	86.48	32.98	2.15	31.51	100	316	Average
4924	47.51	-26.49	74	40.68	35.19	3.15	31.51	100	0	Peak
7386	48.62	-25.38	74	40.12	36.24	3.19	30.93	123	58	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	11 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	105.08	-	-	101.46	32.98	2.15	31.51	123	40	Peak
2462	94.23	-	-	90.61	32.98	2.15	31.51	123	40	Average
4924	50.75	-23.25	74	43.92	35.19	3.15	31.51	120	147	Peak
7386	50.53	-23.47	74	42.03	36.24	3.19	30.93	100	210	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	03 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2422 MHz is fundamental signal which can be ignored. 2. 2398.38 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2398.38	59.75	-18.18	77.93	56.29	32.86	2.11	31.51	100	239	Peak
2422	97.93	-	-	94.39	32.92	2.13	31.51	120	305	Peak
2422	87.23	-	-	83.69	32.92	2.13	31.51	120	305	Average
4844	48.5	-25.5	74	41.75	35.18	3.1	31.53	120	134	Peak
7266	49.55	-28.38	77.93	41.09	36.19	3.22	30.95	100	231	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	03 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2422 MHz is fundamental signal which can be ignored. 2. 2393.34 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2393.34	59.25	-19.12	78.37	55.79	32.86	2.11	31.51	100	128	Peak
2422	98.37	-	-	94.83	32.92	2.13	31.51	100	149	Peak
2422	86.02	-	-	82.48	32.92	2.13	31.51	100	149	Average
4844	48.26	-25.74	74	41.51	35.18	3.1	31.53	100	0	Peak
7266	49.88	-28.49	78.37	41.42	36.19	3.22	30.95	102	347	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	98.62	-	-	95.04	32.95	2.14	31.51	100	305	Peak
2437	86.77	-	-	83.19	32.95	2.14	31.51	100	305	Average
4874	48.7	-25.3	74	41.92	35.18	3.12	31.52	100	245	Peak
7311	49.52	-24.48	74	41.05	36.2	3.21	30.94	111	254	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	06 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	98.92	-	-	95.34	32.95	2.14	31.51	100	181	Peak
2437	87.77	-	-	84.19	32.95	2.14	31.51	100	181	Average
4874	48.19	-25.81	74	41.41	35.18	3.12	31.52	102	360	Peak
7311	48.94	-25.06	74	40.47	36.2	3.21	30.94	100	0	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2399 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2399	48.68	-30.78	79.46	45.22	32.86	2.11	31.51	117	236	Peak
2452	99.46	-	-	95.88	32.95	2.14	31.51	117	236	Peak
2452	88.47	-	-	84.89	32.95	2.14	31.51	117	236	Average
4904	48.99	-25.01	74	42.18	35.19	3.14	31.52	100	231	Peak
7356	49.58	-24.42	74	41.09	36.22	3.2	30.93	100	230	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2399 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2399	50.63	-29.1	79.73	47.17	32.86	2.11	31.51	100	163	Peak
2452	99.73	-	-	96.15	32.95	2.14	31.51	100	163	Peak
2452	88.48	-	-	84.9	32.95	2.14	31.51	100	163	Average
4904	48.56	-25.44	74	41.75	35.19	3.14	31.52	100	0	Peak
7356	49.79	-24.21	74	41.3	36.22	3.2	30.93	120	47	Peak

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	149 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5724.8 MHz is not within restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.8	68.07	-17.88	85.95	60.18	35.52	3.22	30.85	100	244	Peak
5745	105.95	-	-	98.06	35.52	3.21	30.84	100	244	Peak
5745	96.05	-	-	88.16	35.52	3.21	30.84	100	244	Average
11490	32.46	-41.54	74	44.2	13.61	4.47	29.82	100	65	Peak
11490	18.41	-35.59	54	30.15	13.61	4.47	29.82	100	65	Average

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	149 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5724.85 MHz is not within restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5724.85	70	-18.45	88.45	62.11	35.52	3.22	30.85	112	0	Peak
5745	108.45	-	-	100.56	35.52	3.21	30.84	112	0	Peak
5745	98.75	-	-	90.86	35.52	3.21	30.84	112	0	Average
11490	36.8	-37.2	74	48.54	13.61	4.47	29.82	100	56	Peak
11490	19.26	-34.74	54	31	13.61	4.47	29.82	100	56	Average

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	157 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	5785 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	108.04	-	-	100.13	35.53	3.19	30.81	100	0	Peak
5785	98.07	-	-	90.16	35.53	3.19	30.81	100	0	Average
11570	34.35	-39.65	74	45.95	13.68	4.52	29.8	100	65	Peak
11570	18.79	-35.21	54	30.39	13.68	4.52	29.8	100	65	Average

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	157 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5785 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	111.69	-	-	103.78	35.53	3.19	30.81	100	360	Peak
5785	100.56	-	-	92.65	35.53	3.19	30.81	100	360	Average
11570	39.76	-34.24	74	51.36	13.68	4.52	29.8	100	61	Peak
11570	30.49	-23.51	54	42.09	13.68	4.52	29.8	100	61	Average

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	165 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	5825 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	107.59	-	-	99.65	35.55	3.17	30.78	100	0	Peak
5825	96.79	-	-	88.85	35.55	3.17	30.78	100	0	Average
11650	34.52	-39.48	74	46.08	13.65	4.58	29.79	100	356	Peak
11650	22.54	-31.46	54	34.1	13.65	4.58	29.79	100	356	Average

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	165 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5825 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	110.12	-	-	102.18	35.55	3.17	30.78	100	356	Peak
5825	99.61	-	-	91.67	35.55	3.17	30.78	100	356	Average
11650	41.57	-32.43	74	53.13	13.65	4.58	29.79	100	65	Peak
11650	29	-25	54	40.56	13.65	4.58	29.79	100	65	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	149 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	5745 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	106.54	-	-	98.65	35.52	3.21	30.84	100	244	Peak
5745	95.19	-	-	87.3	35.52	3.21	30.84	100	244	Average
11490	34.48	-39.52	74	46.22	13.61	4.47	29.82	100	0	Peak
11490	19.35	-34.65	54	31.09	13.61	4.47	29.82	100	0	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	149 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5745 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	110.74	-	-	102.85	35.52	3.21	30.84	100	356	Peak
5745	99.45	-	-	91.56	35.52	3.21	30.84	100	356	Average
11490	39.64	-34.36	74	51.38	13.61	4.47	29.82	100	360	Peak
11490	26.37	-27.63	54	38.11	13.61	4.47	29.82	100	360	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	157 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	5785 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	108.07	-	-	100.16	35.53	3.19	30.81	100	0	Peak
5785	97.87	-	-	89.96	35.53	3.19	30.81	100	0	Average
11570	36.41	-37.59	74	48.01	13.68	4.52	29.8	100	256	Peak
11570	24.49	-29.51	54	36.09	13.68	4.52	29.8	100	256	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	157 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5785 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	110.09	-	-	102.18	35.53	3.19	30.81	100	360	Peak
5785	99.87	-	-	91.96	35.53	3.19	30.81	100	360	Average
11570	42.81	-31.19	74	54.41	13.68	4.52	29.8	100	0	Peak
11570	29.4	-24.6	54	41	13.68	4.52	29.8	100	0	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	165 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	5825 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	107.22	-	-	99.28	35.55	3.17	30.78	100	116	Peak
5825	97.55	-	-	89.61	35.55	3.17	30.78	100	116	Average
11650	34.83	-39.17	74	46.39	13.65	4.58	29.79	100	0	Peak
11650	27.4	-26.6	54	38.96	13.65	4.58	29.79	100	0	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	165 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5825 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	110.83	-	-	102.89	35.55	3.17	30.78	100	216	Peak
5825	99.59	-	-	91.65	35.55	3.17	30.78	100	216	Average
11650	44.42	-29.58	74	55.98	13.65	4.58	29.79	128	356	Peak
11650	28.57	-25.43	54	40.13	13.65	4.58	29.79	128	356	Average

Test Mode :	5GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	151 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5755	105.82	-	-	97.92	35.53	3.2	30.83	106	240	Peak
5755	95.02	-	-	87.12	35.53	3.2	30.83	106	240	Average
11505	33.96	-40.04	74	45.61	13.7	4.47	29.82	100	0	Peak

Test Mode :	5GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	151 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5755	107.24	-	-	99.34	35.53	3.2	30.83	100	59	Peak
5755	96.01	-	-	88.11	35.53	3.2	30.83	100	59	Average
11508	35.21	-38.79	74	46.86	13.7	4.47	29.82	100	0	Peak

Test Mode :	5GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	159 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5795	106.31	-	-	98.39	35.54	3.18	30.8	103	239	Peak
5795	95.83	-	-	87.91	35.54	3.18	30.8	103	239	Average
11592	33.09	-40.91	74	44.69	13.67	4.53	29.8	100	0	Peak

Test Mode :	5GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	159 (in Laptop Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5795	109.24	-	-	101.32	35.54	3.18	30.8	120	356	Peak
5795	97.99	-	-	90.07	35.54	3.18	30.8	120	356	Average
11592	38.59	-35.41	74	50.19	13.67	4.53	29.8	100	0	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
41.422	35.42	-4.58	40	57.71	10.95	0.4	33.64	122	54	Peak
63.983	34.76	-5.24	40	62.63	5.22	0.5	33.59	-	-	Peak
79.243	35.39	-4.61	40	61.97	6.47	0.55	33.6	-	-	Peak
95.093	34.78	-8.72	43.5	58.04	9.8	0.56	33.62	-	-	Peak
113.714	32.51	-10.99	43.5	53.71	11.8	0.61	33.61	-	-	Peak
513.633	36.63	-9.37	46	50.9	17.5	1.33	33.1	-	-	Peak
2462	105.86	-	-	102.24	32.98	2.15	31.51	200	134	Peak
2462	101.13	-	-	97.51	32.98	2.15	31.51	200	134	Average
4924	51.34	-22.66	74	44.51	35.19	3.15	31.51	120	110	Peak
7386	49.67	-24.33	74	41.17	36.24	3.19	30.93	100	230	Peak

Test Mode :	802.11b	Temperature :	21~22°C
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
41.422	32.95	-7.05	40	55.24	10.95	0.4	33.64	-	-	Peak
77.051	33.16	-6.84	40	60.02	6.2	0.54	33.6	120	154	Peak
113.714	33.74	-9.76	43.5	54.94	11.8	0.61	33.61	-	-	Peak
136.46	32.22	-11.28	43.5	53.98	11.13	0.7	33.59	-	-	Peak
300.367	32.94	-13.06	46	52.3	13.02	0.99	33.37	-	-	Peak
393.472	32.36	-13.64	46	48.65	15.87	1.15	33.31	-	-	Peak
2462	106.7	-	-	103.08	32.98	2.15	31.51	100	200	Peak
2462	101.97	-	-	98.35	32.98	2.15	31.51	100	200	Average
4926	56.49	-17.51	74	49.66	35.19	3.15	31.51	100	28	Peak
4926	50.81	-3.19	54	43.98	35.19	3.15	31.51	100	28	Average
7386	50.07	-23.93	74	41.57	36.24	3.19	30.93	121	57	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	101.78	-	-	98.16	32.98	2.15	31.51	200	136	Peak
2462	90.72	-	-	87.1	32.98	2.15	31.51	200	136	Average
4924	49.15	-24.85	74	42.32	35.19	3.15	31.51	120	112	Peak
7386	50.43	-23.57	74	41.93	36.24	3.19	30.93	200	125	Peak

Test Mode :	802.11g	Temperature :	21~22°C
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	105.47	-	-	101.85	32.98	2.15	31.51	120	350	Peak
2462	94.88	-	-	91.26	32.98	2.15	31.51	120	350	Average
4924	49.67	-24.33	74	42.84	35.19	3.15	31.51	125	48	Peak
7386	50.28	-23.72	74	41.78	36.24	3.19	30.93	120	238	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	101.18	-	-	97.56	32.98	2.15	31.51	102	55	Peak
2462	89.31	-	-	85.69	32.98	2.15	31.51	102	55	Average
4924	49.48	-24.52	74	42.65	35.19	3.15	31.51	120	137	Peak
7386	50.39	-23.61	74	41.89	36.24	3.19	30.93	112	59	Peak

Test Mode :	2.4GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	11 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	104.47	-	-	100.85	32.98	2.15	31.51	119	303	Peak
2462	92.56	-	-	88.94	32.98	2.15	31.51	119	303	Average
4924	49.73	-24.27	74	42.9	35.19	3.15	31.51	100	234	Peak
7386	50.38	-23.62	74	41.88	36.24	3.19	30.93	120	47	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2452	96.95	-	-	93.37	32.95	2.14	31.51	104	51	Peak
2452	84.85	-	-	81.27	32.95	2.14	31.51	104	51	Average
4904	49.75	-24.25	74	42.94	35.19	3.14	31.52	102	354	Peak
7356	49.62	-24.38	74	41.13	36.22	3.2	30.93	120	155	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2452	99.87	-	-	96.29	32.95	2.14	31.51	100	197	Peak
2452	87.97	-	-	84.39	32.95	2.14	31.51	100	197	Average
4904	49.06	-24.94	74	42.25	35.19	3.14	31.52	102	155	Peak
7356	50.71	-23.29	74	42.22	36.22	3.2	30.93	120	223	Peak

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	149 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	99.27	-	-	91.38	35.52	3.21	30.84	123	322	Peak
5745	88.64	-	-	80.75	35.52	3.21	30.84	123	322	Average
11490	30.14	-43.86	74	41.88	13.61	4.47	29.82	120	157	Peak

Test Mode :	802.11a	Temperature :	21~22°C
Test Channel :	149 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5745 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	107.38	-	-	99.49	35.52	3.21	30.84	100	3	Peak
5745	96.82	-	-	88.93	35.52	3.21	30.84	100	3	Average
11490	40.77	-33.23	74	52.51	13.61	4.47	29.82	120	168	Peak
11490	30.94	-23.06	54	42.68	13.61	4.47	29.82	120	168	Average

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	149 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	100.43	-	-	92.54	35.52	3.21	30.84	100	314	Peak
5745	89.42	-	-	81.53	35.52	3.21	30.84	100	314	Average
11490	30.69	-43.31	74	42.43	13.61	4.47	29.82	100	0	Peak

Test Mode :	5GHz 802.11n-HT20	Temperature :	21~22°C
Test Channel :	149 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	5745 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	108.85	-	-	100.96	35.52	3.21	30.84	100	336	Peak
5745	97.61	-	-	89.72	35.52	3.21	30.84	100	336	Average
11490	41.85	-32.15	74	53.59	13.61	4.47	29.82	120	167	Peak
11490	34.22	-19.78	54	45.96	13.61	4.47	29.82	120	167	Average

Test Mode :	5GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	151 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5755	98.19	-	-	90.29	35.53	3.2	30.83	100	322	Peak
5755	86.85	-	-	78.95	35.53	3.2	30.83	100	322	Average
11510	31.1	-42.9	74	42.75	13.7	4.47	29.82	120	199	Peak

Test Mode :	5GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	151 (in Tablet Mode with Adapter 1 for Sample 1)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5755	108.09	-	-	100.19	35.53	3.2	30.83	106	21	Peak
5755	96.86	-	-	88.96	35.53	3.2	30.83	106	21	Average
11510	38.75	-35.25	74	50.4	13.7	4.47	29.82	100	234	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 2 for Sample 2)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2392 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2392	48.09	-23.25	71.34	44.63	32.86	2.11	31.51	100	318	Peak
2452	91.34	-	-	87.76	32.95	2.14	31.51	100	318	Peak
2452	79.41	-	-	75.83	32.95	2.14	31.51	100	318	Average
4904	48.6	-25.4	74	41.79	35.19	3.14	31.52	120	0	Peak
7356	49.16	-24.84	74	40.67	36.22	3.2	30.93	120	121	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 2 for Sample 2)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2396 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2396	48.07	-26.88	74.95	44.61	32.86	2.11	31.51	102	21	Peak
2452	94.95	-	-	91.37	32.95	2.14	31.51	102	21	Peak
2452	83.26	-	-	79.68	32.95	2.14	31.51	102	21	Average
4904	48.31	-25.69	74	41.5	35.19	3.14	31.52	120	165	Peak
7356	50.28	-23.72	74	41.79	36.22	3.2	30.93	100	231	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 3 for Sample 3)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2396 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2396	47.13	-25.27	72.4	43.67	32.86	2.11	31.51	117	139	Peak
2452	92.4	-	-	88.82	32.95	2.14	31.51	117	139	Peak
2452	81.64	-	-	78.06	32.95	2.14	31.51	117	139	Average
4904	48.23	-25.77	74	41.42	35.19	3.14	31.52	120	100	Peak
7356	50.34	-23.66	74	41.85	36.22	3.2	30.93	100	0	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 3 for Sample 3)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2392 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2392	46.64	-27.99	74.63	43.18	32.86	2.11	31.51	100	302	Peak
2452	94.63	-	-	91.05	32.95	2.14	31.51	100	302	Peak
2452	83.27	-	-	79.69	32.95	2.14	31.51	100	302	Average
4904	48.52	-25.48	74	41.71	35.19	3.14	31.52	120	157	Peak
7356	50.1	-23.9	74	41.61	36.22	3.2	30.93	100	230	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 4 for Sample 4)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Horizontal
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2392 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2392	47.97	-26.07	74.04	44.51	32.86	2.11	31.51	119	230	Peak
2452	94.04	-	-	90.46	32.95	2.14	31.51	119	230	Peak
2452	82.57	-	-	78.99	32.95	2.14	31.51	119	230	Average
4904	48.87	-25.13	74	42.06	35.19	3.14	31.52	120	120	Peak
7356	48.93	-25.07	74	40.44	36.22	3.2	30.93	100	124	Peak

Test Mode :	2.4GHz 802.11n-HT40	Temperature :	21~22°C
Test Channel :	09 (in Laptop Mode with Adapter 4 for Sample 4)	Relative Humidity :	41~42%
Test Engineer :	Allen Cheng	Polarization :	Vertical
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. 2392 MHz is not within restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2392	47.91	-26.49	74.4	44.45	32.86	2.11	31.51	101	163	Peak
2452	94.4	-	-	90.82	32.95	2.14	31.51	101	163	Peak
2452	83.06	-	-	79.48	32.95	2.14	31.51	101	163	Average
4904	49.9	-24.1	74	43.09	35.19	3.14	31.52	100	230	Peak
7356	49.86	-24.14	74	41.37	36.22	3.2	30.93	154	0	Peak

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

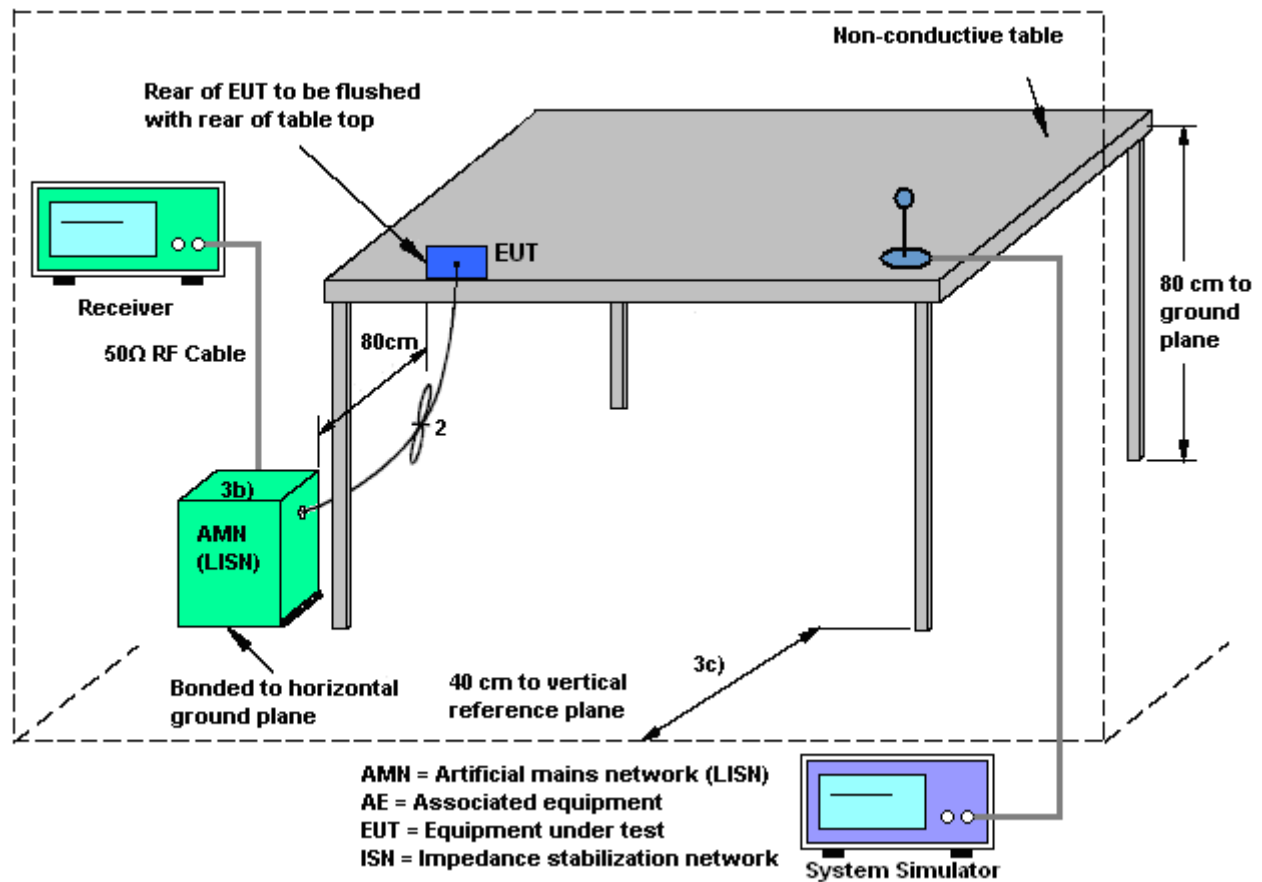
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

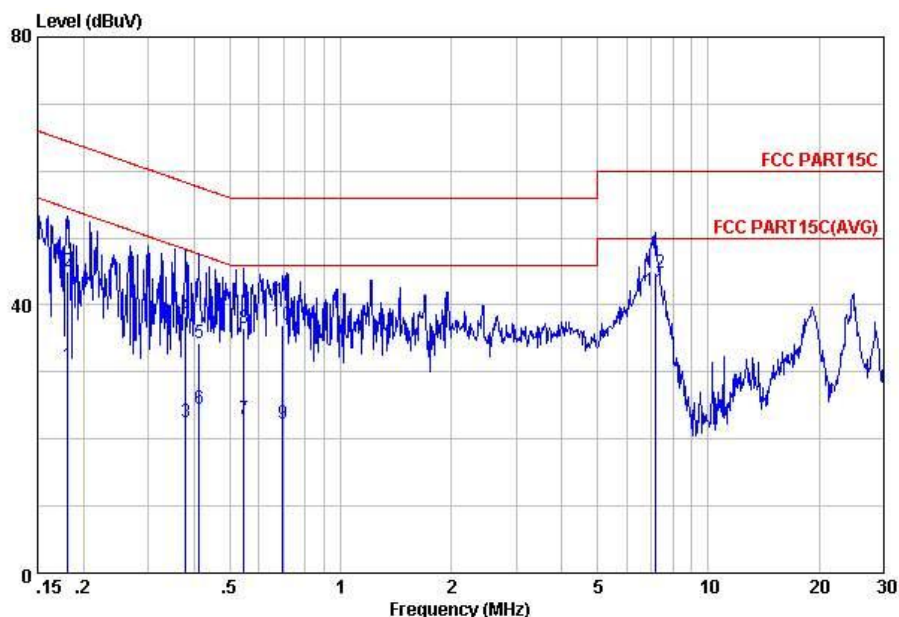
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 KHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	19~20℃
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (2.4GHz) Link + Adapter 1 + TC for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



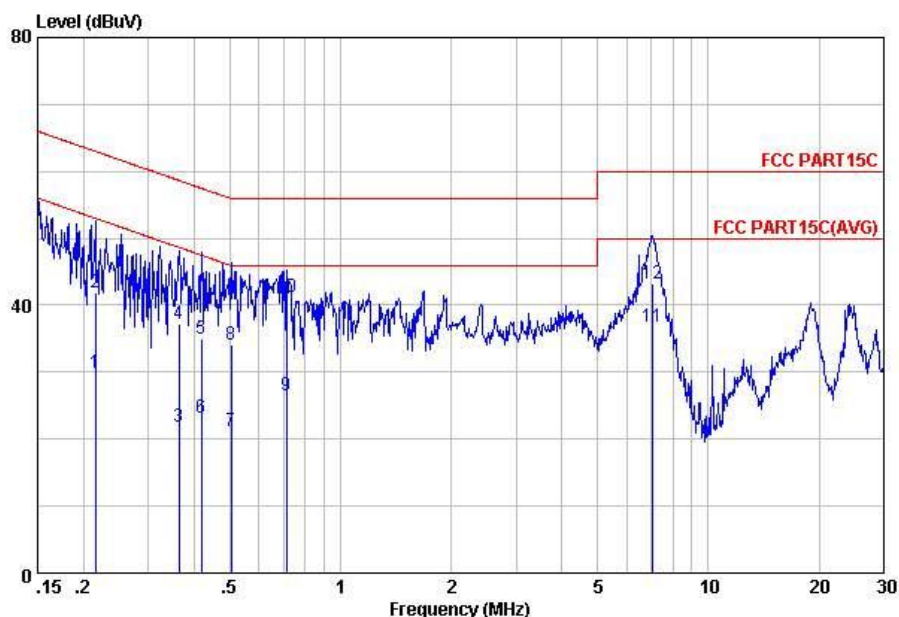
Site : C001-KS
Condition: FCC PART15C LISN-111230 LINE

mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.18	30.94	-23.48	54.42	20.80	-0.07	10.21	Average
2	0.18	44.94	-19.48	64.42	34.80	-0.07	10.21	QP
3	0.38	22.57	-25.73	48.30	12.40	-0.08	10.25	Average
4	0.38	38.27	-20.03	58.30	28.10	-0.08	10.25	QP
5	0.41	34.37	-23.22	57.59	24.20	-0.08	10.25	QP
6	0.41	24.47	-23.12	47.59	14.30	-0.08	10.25	Average
7	0.55	22.87	-23.13	46.00	12.69	-0.08	10.26	Average
8	0.55	36.47	-19.53	56.00	26.29	-0.08	10.26	QP
9	0.70	22.38	-23.62	46.00	12.20	-0.09	10.27	Average
10	0.70	36.88	-19.12	56.00	26.70	-0.09	10.27	QP
11	7.21	42.02	-7.98	50.00	31.80	-0.13	10.35	Average
12	7.21	44.82	-15.18	60.00	34.60	-0.13	10.35	QP



Test Mode :	Mode 1	Temperature :	19~20℃
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (2.4GHz) Link + Adapter 1 + TC for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISM-111230 NEUTRAL

mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.22	29.85	-23.16	53.01	19.70	-0.07	10.22	Average
2	0.22	41.85	-21.16	63.01	31.70	-0.07	10.22	QP
3	0.36	21.87	-26.78	48.65	11.70	-0.08	10.25	Average
4	0.36	37.27	-21.38	58.65	27.10	-0.08	10.25	QP
5	0.42	35.07	-22.39	57.46	24.90	-0.08	10.25	QP
6	0.42	23.07	-24.39	47.46	12.90	-0.08	10.25	Average
7	0.50	21.27	-24.73	46.00	11.10	-0.08	10.25	Average
8	0.50	34.07	-21.93	56.00	23.90	-0.08	10.25	QP
9	0.71	26.49	-19.51	46.00	16.30	-0.08	10.27	Average
10	0.71	41.19	-14.81	56.00	31.00	-0.08	10.27	QP
11	7.06	36.72	-13.28	50.00	26.50	-0.13	10.35	Average
12	7.06	43.12	-16.88	60.00	32.90	-0.13	10.35	QP

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Connected Construction

Non-standard connector used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 29, 2012	Jan. 22, 2013~ Feb. 04, 2013	Dec. 28, 2013	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 22, 2012	Jan. 22, 2013~ Feb. 04, 2013	Aug. 21, 2013	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 22, 2012	Jan. 22, 2013~ Feb. 04, 2013	Aug. 21, 2013	Conducted (TH01-KS)
DC Power Supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 22, 2012	Jan. 22, 2013~ Feb. 04, 2013	Aug. 21, 2013	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 08, 2012	Jan. 17, 2013	Nov. 07, 2013	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	100400	9kHz~30GHz	Jun. 01, 2012	Jan. 17, 2013	May 31, 2013	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2012	Jan. 17, 2013	Dec. 06, 2013	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/ 001	9 kHz~30 MHz	Jul. 03, 2012	Jan. 17, 2013	Jul. 02, 2014	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2013	Jan. 17, 2013	Jan. 05, 2014	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz	Jun. 01, 2012	Jan. 17, 2013	May 31, 2013	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 29, 2012	Jan. 17, 2013	Dec. 28, 2013	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2012	Jan. 17, 2013	Nov. 06, 2013	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	9170249	15GHz~40GHz	Nov. 23, 2012	Jan. 17, 2013	Nov. 22, 2013	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 01, 2012	Feb. 25, 2013	May 31, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 29, 2012	Feb. 25, 2013	Dec. 28, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 29, 2012	Feb. 25, 2013	Dec. 28, 2013	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 15, 2012	Feb. 25, 2013	Nov. 14, 2013	Conduction (CO01-KS)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150KHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP2D1707 as below.